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THE SAN JOAQUIN LIGHT AND POWER MAGAZINE

FOR CONSUMERS & EMPLOYEES

Flood Lighting of the Beautiful Kern County Court House

PUBLISHED MONTHLY BY THE
SAN JOAQUIN LIGHT & POWER CORPORATION

Vol. IV, No. 2

February, 1916

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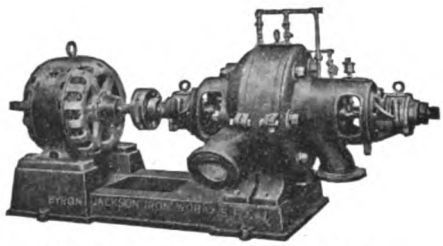

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San Joaquin Light and Power Magazine

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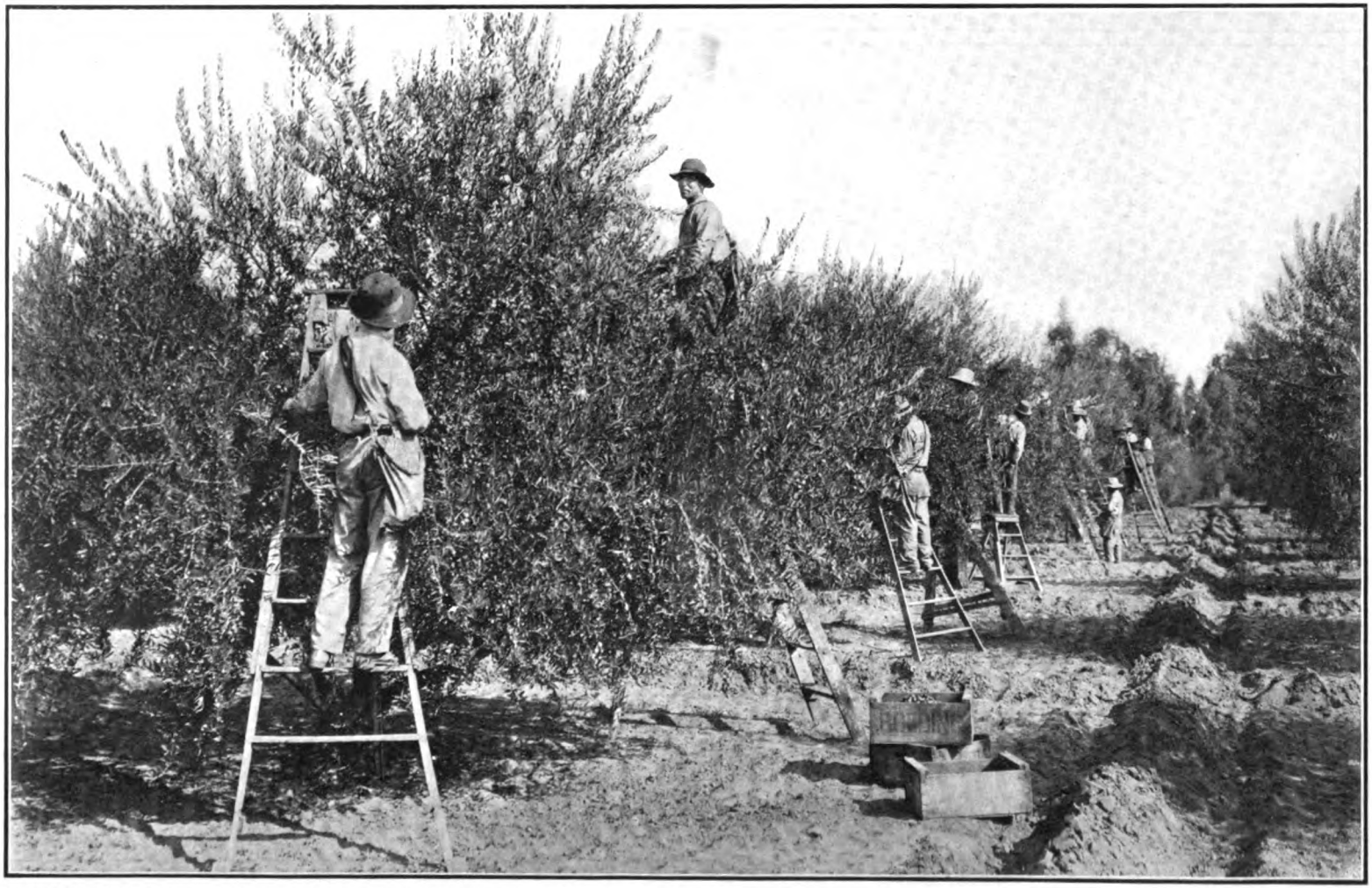

A full bearing olive orchard near Fresno during picking time, showing the method of picking and the high quality of the product as to be seen in the top one of the picking boxes piled up in the foreground

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SAN JOAQUIN LIGHT AND POWER MAGAZINE

Vol. IV February, 1916 No. 2

California's Ripe Olive Industry On Eve of Promising Future

THE California ripe olive, that dark purple, luscious fruit which in food and medicinal value has no superior, is rapidly gaining more fame and wealth for the state. Borrowed from the sunny shores of the Mediterranean, this product is now being raised in its new home, in superior quality, and with the magic touch of California sunshine and climate promises to make the state of its adoption, in a few years to come, one of the most famous olive-growing centers of the world.

The fact that California produces only about one-fifth of the olive products consumed in the United States makes the olive business particularly alluring. Fifteen years ago the olive in California was practically unknown and it has grown by such rapid strides that at the present time there are practically 28,000 acres planted to trees. Of this number 15,000 acres, approximately, are in bearing. The 1914 production of the state was worth approximately $2,500,000, from about 1,000,000 gallons of pickled olives and 800,000 gallons of oil. There are thirty-eight counties in which 1,000 and more trees are now growing, and these counties range in location from Shasta to the Mexican border. The largest olive grove in the world is on the San Fernando road, about twenty-five miles north of Los Angeles, and is of 2,000 acres, containing more than 100,000 trees. It is larger by ten times than the greatest grove in Spain.

The first olive trees planted in California were brought to the San Diego Mission by the old mission padres in the year 1769. An orchard was established at the mission and is still in existence and bearing crops. It is not known whether the padres brought the trees or cuttings from Spain, or whether they brought cuttings from trees which had been growing in Mexico since the time of the conquest of Cortez. The history of the olive, however, dates back many centuries and was one of the food staples of the Holy Land in the days that supplied the happenings recorded in the Bible. There are olive trees standing on the Mount of Olives and in the Garden of Gethsemane said to be more than 3,000 years old, about eight feet in diameter at the base, and still bearing fruit.

In California the olive has long passed the experimental stage. This state possesses the same soil and climatic conditions in which the fruit thrives in the countries of Europe, Asia and Africa, and there is absolutely no obstacle to prevent California from supplying the demands of this country and also becoming an exporter of the numerous products obtainable from the fruit. The tree is a slow beginner, it requiring about six years after planting to obtain the first crop. In full bearing, a good grove will produce three tons to the acre.

The olive tree is hardy and will endure practically ten degrees more cold than the orange tree. The fruit freezes at 28 degrees and while its value is ruined thereby for pickling purposes, as the freezing dissipates the water

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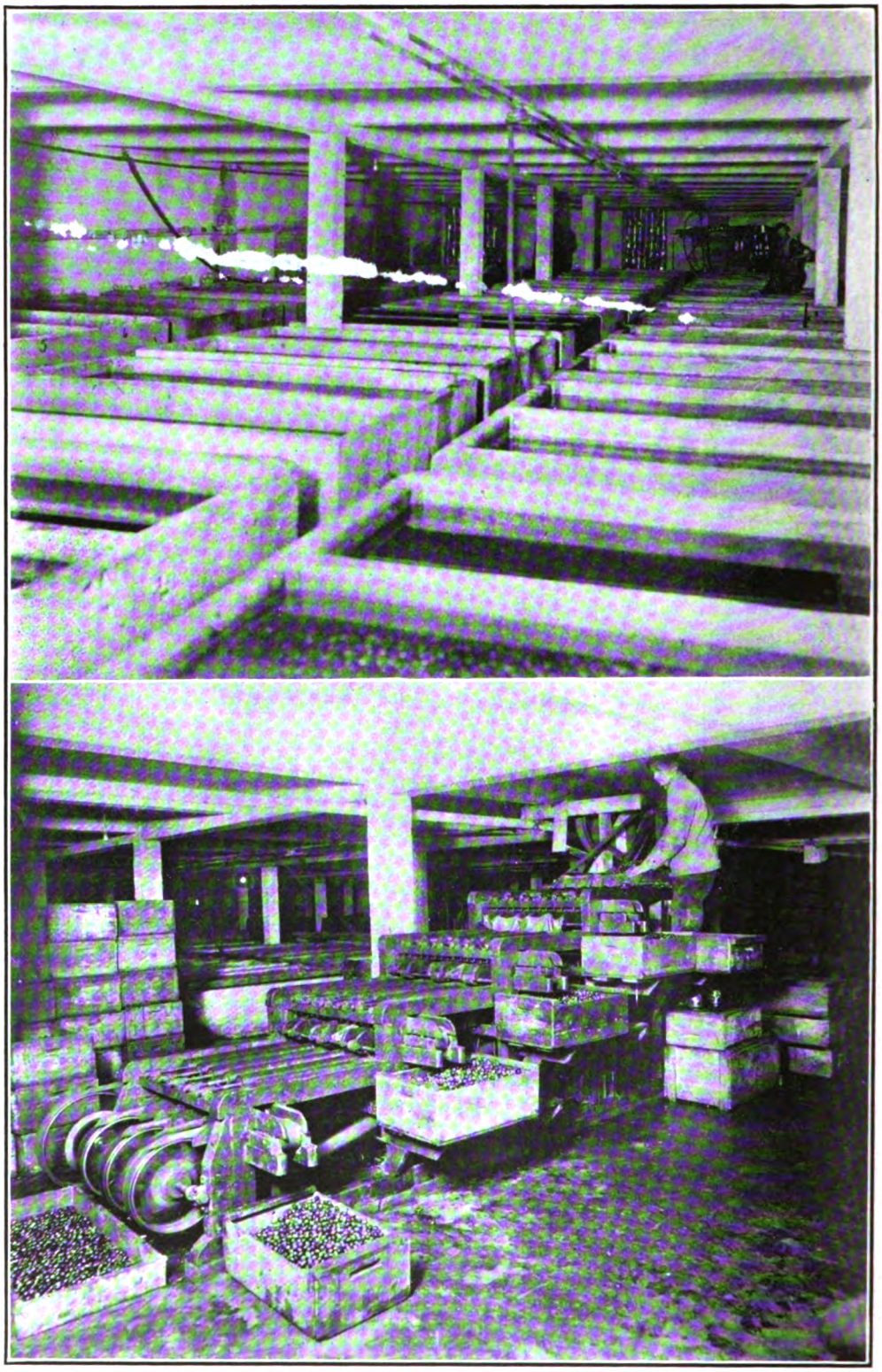

Upper, view down one of the alleys in the plant of the Roeding Fig and Olive Company in Fresno, showing the most improved concrete pickling vats containing olives in the different stages of preparation. Lower, olive grader in use in the same plant, through which the fruit upon delivery from the orchard is run to separate into the four grades before beginning the pickling process.

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and causes it to shrivel, all of the oil properties are retained and are still suitable for crushing.

The situation effecting the grower and marketer at the present time in California is interesting. Both factors are represented by organizations striving to bring about a more stable condition of affairs and a more equable basis of dealing. The marketing situation the past years worked to the disadvantage of the grower, but at the present time conditions are greatly improved and are particularly roseate for the future. Heretofore crops, and some groves at present under old contracts, have brought prices, that in light of more sane marketing policy, are fictitious. Some product brought growers gross $200 a ton and net more than $125. When it is realized that a good grove will produce three tons to the acre, the large profits are readily appreciated. The competition among unorganized packers and the increase in demand, temporarily choked the market, and the first of the present season found the growers without contracts facing a big reduction in price. In order to clarify the situation in the San Joaquin Valley, the Roeding interests maintained a blanket offer of $25 a ton, which after picking left the grower a margin of profit, but not what he had been used to getting. The foreign situation and the growing American market now insure better prices for next season and these factors, together with the work of the organizations, point to a future established price of from $75 to $150 per ton for pickling olives and $25 to $45 for oil olives.

While there are many hundreds of varieties of olive trees, it has been found that the Mission and the Manzanillo are best adapted to California, although experiments are now being conducted with encouraging success with the Sevillano and Oscalano varieties. These newer varieties, however, are more susceptible to frost. The Mission variety is the most profitable, it being able to stand about two degrees more of cold than the other varieties, contains more oil and is a more regular and prolific bearer.

Olives for pickling are picked by hand, in order to guard against damage to the fruit, and this work costs about $16 a ton. Oil olives are shaken from the trees and gathered at a cost at about $12 a ton. A ripe olive crop is never a loss, for if it cannot be used for pickling purposes, it always can be crushed into oil. A ton of frozen olives would have weighed about 2,100 pounds had they not been touched by frost. Many trees were originally planted for oil but these varieties are now being reduced by the process of grafting, owing to the double purpose that the pickling variety can serve.

Already, the industry in California is one of the most substantial and rapidly growing of which the state can boast. Two questions, however, vitally effect it, but events of recent months are making the prospects more encouraging than ever before. A market for the production, and protection against foreign importations are the matters upon which its future welfare hinge. Co-operation among growers and packers, together with the increasing favor of the American people for the product, is rapidly extending the market and will satisfactorily care for that phase. Adequate protection through tariff legislation is now being actively strived for. In the Mediterranean countries, where the value of the olive is fully appreciated, ample protection is given by the governments, and in France a bounty is paid for the planting of orchards so as to encourage an ever-increasing supply of this foodstuff. The war in Europe also has been instrumental in strengthening the market for the California product, as the result of an embargo Italy placed into effect the 8th of February upon olive oil. For years past Italy has been the largest importer of oil into the United States, almost 70 per cent of the annual shipments coming from that country. This accordingly leaves a great part of the annual supply to be filled elsewhere.

The import business of the United States in olive products amounts to

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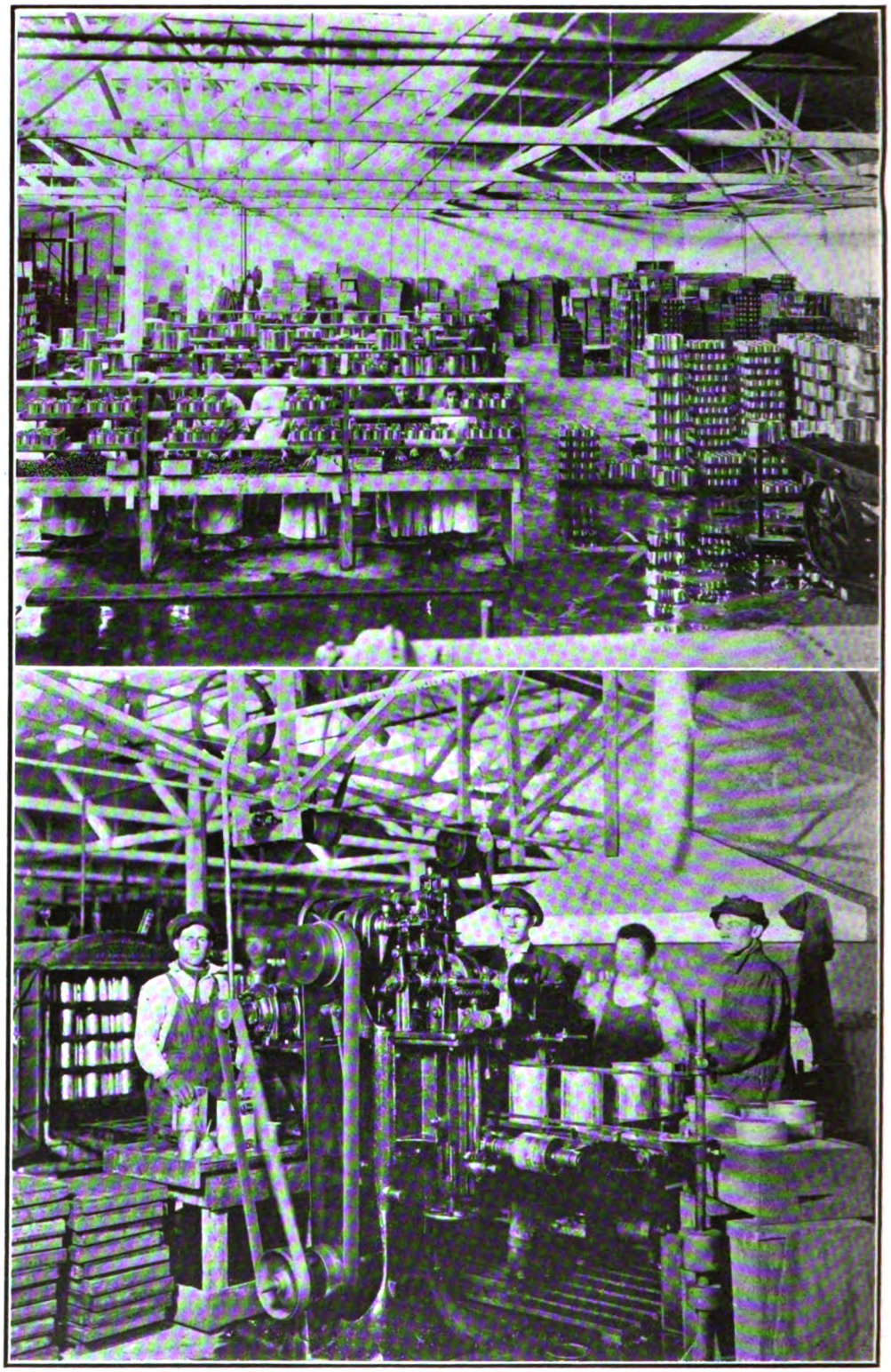

Two scenes in the Roeding packing plant in Fresno. Upper, women sorting choice grades into cans for the capping and cooking process, which is shown in the lower view. From the capping machine the filled and sealed cans are transferred to the retort shown at the left, where they are subjected to a heating process. Labeling and packing into boxes for shipment then follows.

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almost $1,000,000 per month. In 1912, 5,076,857 gallons of pickled olives, valued at $2,300,000, and 5,472,528 gallons of oil, valued at $6,500,000, were shipped in. For the four years 1910, 1911, 1912 and 1913 the value of olive oil imports alone were $4,869,114, $6,014,191, $6,170,882 and $6,739,172, respectively, vividly showing the increasing demand in this country for this foodstuff. Although Spain is the greatest olive producer in Europe, its imports to this country are not very heavy. The imports of 1913 were divided among the various countries as follows: Italy, 68.66 per cent; France, 17.86 per cent; Spain, 6.70 per cent, and other countries, 6.78 per cent. It is hence seen that under favorable conditions a remarkably attractive field is open to the olive growers of California.

Until recent years the olive popular with that small proportion of the American population familiar with the fruit, was the green olive. The ripe olive was a thing barely known. The green olive was obtained largely by importation from foreign countries, Spain and Italy principally, although a considerable quantity was packed in the lower part of California. With the growth of the industry and the education of the taste of the people, the popularity of the green olive has naturally waned. In comparison with the ripe olive, there is not a leg for it to stand on, so to speak. The tastiness and food value of the olive lies in the oil it contains. In the green product the fruit is not mature. The oils have not formed and the pickling process oftentimes impregnates the fruit very heavily with lyes and salts in order to overcome the natural acid and to preserve it for the demands of commerce. This condition naturally does not make for one nearly so healthful as is to be found respecting the ripe olive. In fact, the issue, if it may be spoken of as such, between the ripe and the green olive is one that is now attracting the attention of the health and agricultural departments of the United States Government, as well as the growing and packing organizations of the orchardists. The government is at the present time conducting an investigation to determine the proper time for picking the olive so as to insure the maximum amount of oil under the most favorable conditions for pickling and crushing. The growers, through the educational work of their organizations, are being made to realize that the higher the standard of the quality of their fruit when turned over to the packers, the better will be the quality as it reaches the consumer, the more favorable its reception and larger the demand that will be created. It is generally the rule, after ripe olives have been introduced where green olives were popular, the taste for the more mature fruit becomes strongest and the use of the green product is soon discontinued. Hence it is only natural, the olive men declare, that the demand of the people is everywhere increasing for the ripe olive.

The nutritive and medicinal value of the olive is unquestioned. Pickled ripe olives constitute an extremely nutritious and digestive form of food. They contain a large amount of oils, carbohydrates and some nitrogenous matter, and in the Mediterranean sections replace meat to a certain extent—among the poorer classes almost entirely. A meal of ripe olives and bread is not only palatable, but nutritious and sustaining, and the amount eaten is to be limited only by the same consideration as that of any other good, wholesome food.

With the Anglo-Saxon peoples the consumption of olive oil as an article of food is still a negligible quantity, being for the most part limited to use in salads. Among the Latin races, however, it is a recognized staple. In the Mediterranean countries the average annual consumption is from three to four gallons of oil per capita. In Spain alone the annual production of olive oil is in the neighborhood of 42,000,000 gallons.

The pickling of the olive is accompanied by a process of lye and salt solutions, the lye to neutralize the acid contained in the natural fruit and the salt to preserve it. There are various

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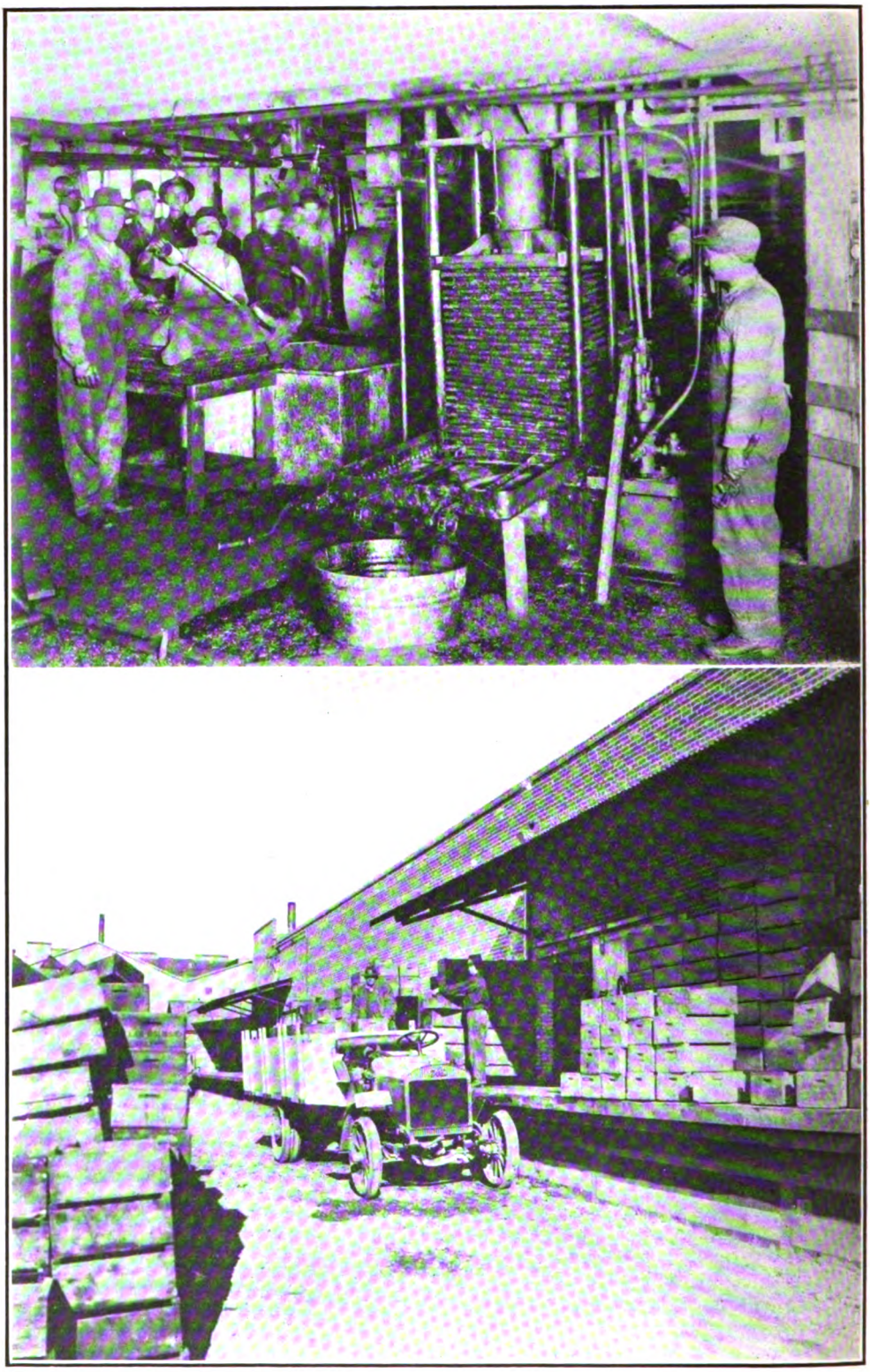

Upper, crushing olives in the process of making olive oil. Lower, modern method by which olives for both pickling and oil are delivered at the packing house

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methods of pickling and, while the same general process applies in all, the procedures may be different according to the variation in conditions effecting the fruit and surrounding the process. Some batches of fruit require longer time than others in the process, and some do not require as strong solutions, those factors being determined by differences of temperature and oil content.

Owing to the universal reputation it has for the high quality of its product, the process of the Roeding Fig and Olive Company in its plant in Fresno is interesting. After delivery in the packing boxes at the plant, the fruit is run through a grading machine, which automatically separates it as to size. Only fruit of ten-sixteenths of an inch or over in diameter is regarded as suitable for pickling, and the smaller size is used for oil crushing. This machine is so sensitive as to be adjusted to one-thirty-second of an inch. It segregates the pickling size into four distinct grades. The machine is one of the features of the big Fresno plant and is the invention of W. D. Mackerill, the official pickler of the institution. After the grading process, the different grades are then sorted for color, and then placed into separate vats, in this instance the containers being built of concrete in the basement of the establishment. A solution of approximately two per cent lye is applied and after a submergence of twenty-four hours the lye is drawn off. The contents of the vat are then allowed to remain exposed to the air from twelve to twenty-four hours and then submerged again in a lye solution, after which they are again exposed to the air. If necessary, according to the progress of the oxidation thereby accomplished, another submergence in lye solution is given, immediately after which fresh water is applied, drawing off the lye. The application of the salt solution used in pickling is begun and the strength of the same gradually increased from two to twelve per cent. When properly pickled the olives are then removed to the canning department where they are hand sorted and placed in cans by women. The cans are then conveyed to an automatic capping machine, after which they are cooked by being submitted to 220 degrees of heat in a large retort. The gallon cans remain in the holder twelve minutes and the smaller sizes eight minutes. This process enables the finished product to remain unopened an indefinite length of time without danger of spoiling. All California olives are treated in this manner, which is one reason why they are superior in taste to the imported product, it being necessary to pack the foreign olives in a salt solution of almost double strength to lay them before the American customer. The labeling and boxing is accomplished by machinery.

The pickling of olives is a simple process. There is no mystery connected with it and the business people engaged in the industry are glad to impart any information that will tend to popularize the foodstuff. Pickling is done each season in thousands of California homes.

Below, a formula of a pickling process that may be accomplished with ease in any household, is given.

Place the olives in a 1½ per cent solution of lye (6 pounds of lye to 50 gallons of water) and leave for 6 hours. This is to cut the skin in order to allow air and water to penetrate easily.

Remove the lye solution and leave the olives exposed to the air for 24 to 36 hours. This is to darken the lighter olives by oxidation of the pulp.

Examine the olives. If the lye has not penetrated nearly to the pit, as shown by a darkening of the color of the flesh, treat them with a fresh lye solution of the same strength. This is to cut the pulp and facilitate the extraction of the bitter principal. Remove the solution when it has penetrated sufficiently.

Replace the lye solution with plain water. Change this water twice a day until all the lye has been removed—four to eight days. This is to remove the excess of lye and any bitterness not destroyed by the lye.

Replace the water with a weak brine composed of 12 pounds of salt in 50

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gallons of water and allow to stand for two to four days. This is to avoid shriveling the olives by placing them directly in a strong brine.

Replace the weak brine with a stronger, composed of 24 pounds of salt in 50 gallons of water. This is to give the amount of salt most agreeable to the taste.

At this state the olives are ready to bottle or can.

If to be kept in bulk (in barrels), they must be left in the brine until it has penetrated thoroughly—about seven days.

Replace brine with a stronger—40 pounds of salt to 50 gallons of water —and leave for about two weeks.

Finally place in a brine composed of 50 pounds of salt in 50 gallons of water. This makes the olives much saltier than is agreeable, but is necessary to make them keep through the summer.

Modification of the process is sometimes necessary. To pickle olives successfully this outline must not be followed rigidly. It must be modified at almost every step according to the variety and condition of the olives, the kind and temperature of the water, and the kind and purity of the lye. If the object of each step is understood and the process carefully watched the requisite modifications are easily made.

The method of making oil is a crushing process, and after the substance has been extracted it is stored in 2,000 gallon tanks and allowed to age for one year, to obtain the required state of mellowness, after which it is either bottled or canned.

At the present time, of particular interest to the olive grower is the California Ripe Olive Association. Speaking of its intents and purposes recently, Mr. R. L. Underhill, the secretary-treasurer said:

"It is an incorporated, non-profit, co-operative body with a broad charter which gives it authority to do anything necessary in the handling of olives. It was formed as a result of several months work amongst the growers, culminating in a meeting in San Francisco on October 29th, 1915, of sixteen delegates representing all the districts of the state, together with a large number of growers.

"Its purpose is to get a majority of the olive growers together in a strong, cohesive body, to develop the eastern markets, to popularize the ripe olive as a table food, to encourage the formation of local packing plants in the important centers, to sell if deemed advisable all such pack, and in general to do all things possible to place this important industry upon a firm, stable footing. This must be done for the grower to have any degree of confidence in the industry.

"We are constructive, absolutely so, in our plans and have no desire to retard or injure any of the present interests in the packing business, but there are weaknesses in it which must be strengthened and it seems up to the growers to do this. The future of the industry looms up large, very large, and the acreage and production have now reached a point wherein the grower must consider his welfare and investment most seriously.

"For the present, the Association is simply expanding its work for members and encouraging the local spirit for packing plants. It must have a fair proportion of the growers of the state enlisted, to act as it should, but the spirit manifested by them thus far indicates that the olive grower is as keen for the co-operative movement as is the orange and lemon grower, the grape, the almond, the walnut grower.

"We are growing carefully, with a democratic self-government, for the welfare of the olive industry as a whole, and such a movement must succeed—and is succeeding."

At the present time there are almost twenty established firms engaged in the pickling and oil crushing industry in this state, not considering an almost equally as large number of co-operative establishments. That the future for olive growers is bright, none who have investigated conditions can doubt.

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The Merced River at the Merced Falls Power House, showing the great volume of water passing down the river at this point during the high water stage. The site of the power house is at the extreme left of the dam.

New Low Head Hydro Electric Plant Completed at Merced Falls

By A. S. KALENBORN, Electrical Engineer

On the 24th of January, electric power was generated at the Merced Falls site, for the first time in five years, or since the former plant was washed out by the flood of January 31, 1911.

The new plant just completed is a permanent structure, reinforced concrete on bedrock foundation, taking the place of the former timber construction, resting partly on the gravel which overlies the slate bedrock.

Before describing this "low head" plant, the only one on our system, it might be well to relate the history of this old power site.

Merced Falls, so called from a twelve foot drop in the bed of the Merced River at a point where it emerges from the rugged mountains into the foothills, is in Merced County, about twenty miles northeast of the city of Merced, quite near the boundary line between Merced and Mariposa counties. The river rises in the Sierras, near Mount Lyell, in the Yosemite National Park, flows southwest about 100 miles, and empties into the San Joaquin River north of the city of Merced. It is the same water which, tumbling down the perpendicular walls of the Yosemite Valley in the many beautiful waterfalls, delights the eye of the tourist, that is put to the commonplace work of generating electricity in our plant at Merced Falls.

As there is no regulation of the runoff within the watershed; that is, there are no storage reservoirs, the flow of the Merced River is quite variable, dwindling from a flood of nearly 40,000 cubic feet per second to a low flow in the autumn of only a few hundred "second feet."

Power sites within the broad valley of the San Joaquin are scarce, so we find that as early as 1854 advantage was taken of this mill site by Wm. Nelson and Son, who built a grist mill

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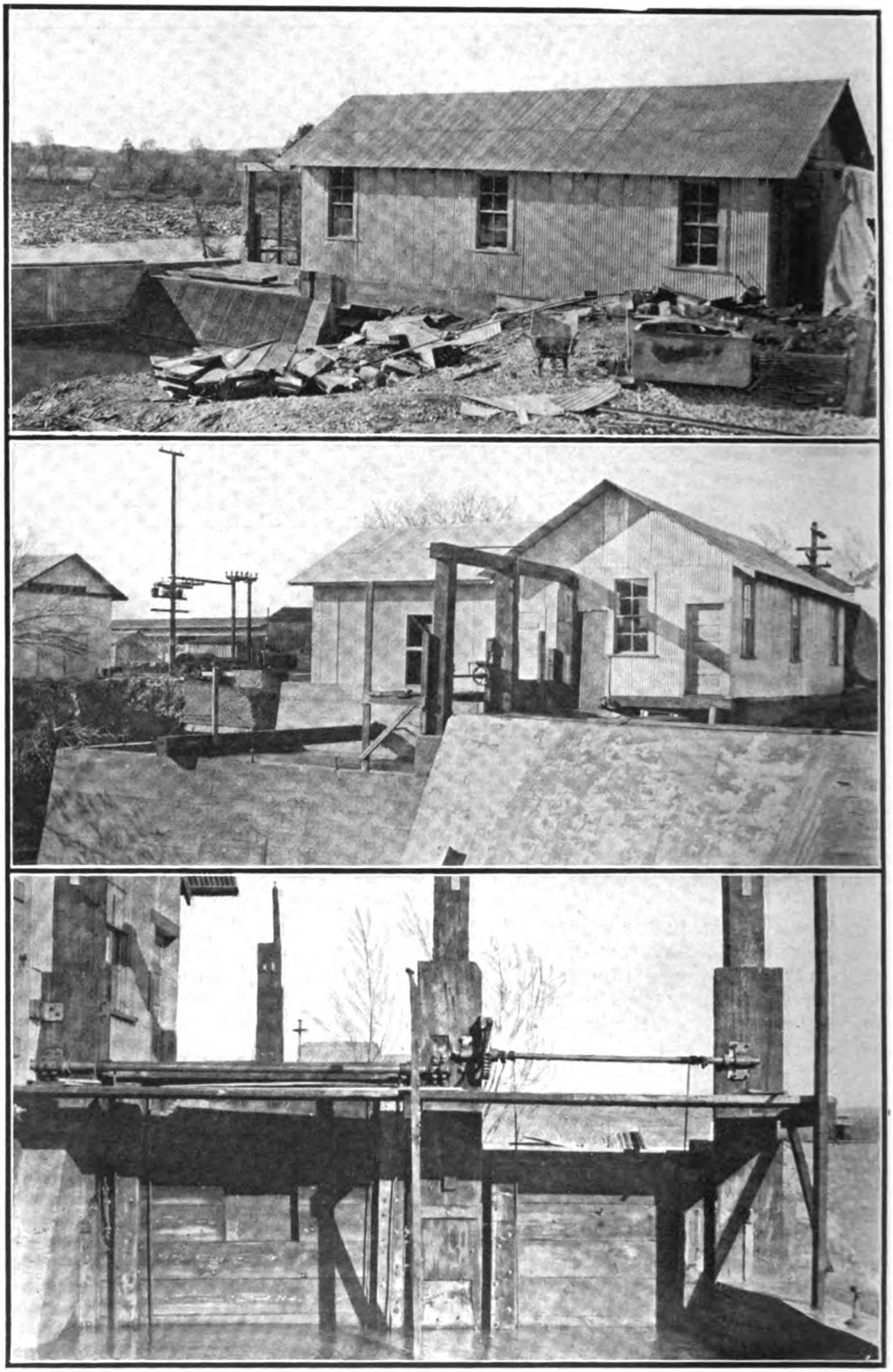

Views of the new Merced Falls Power House

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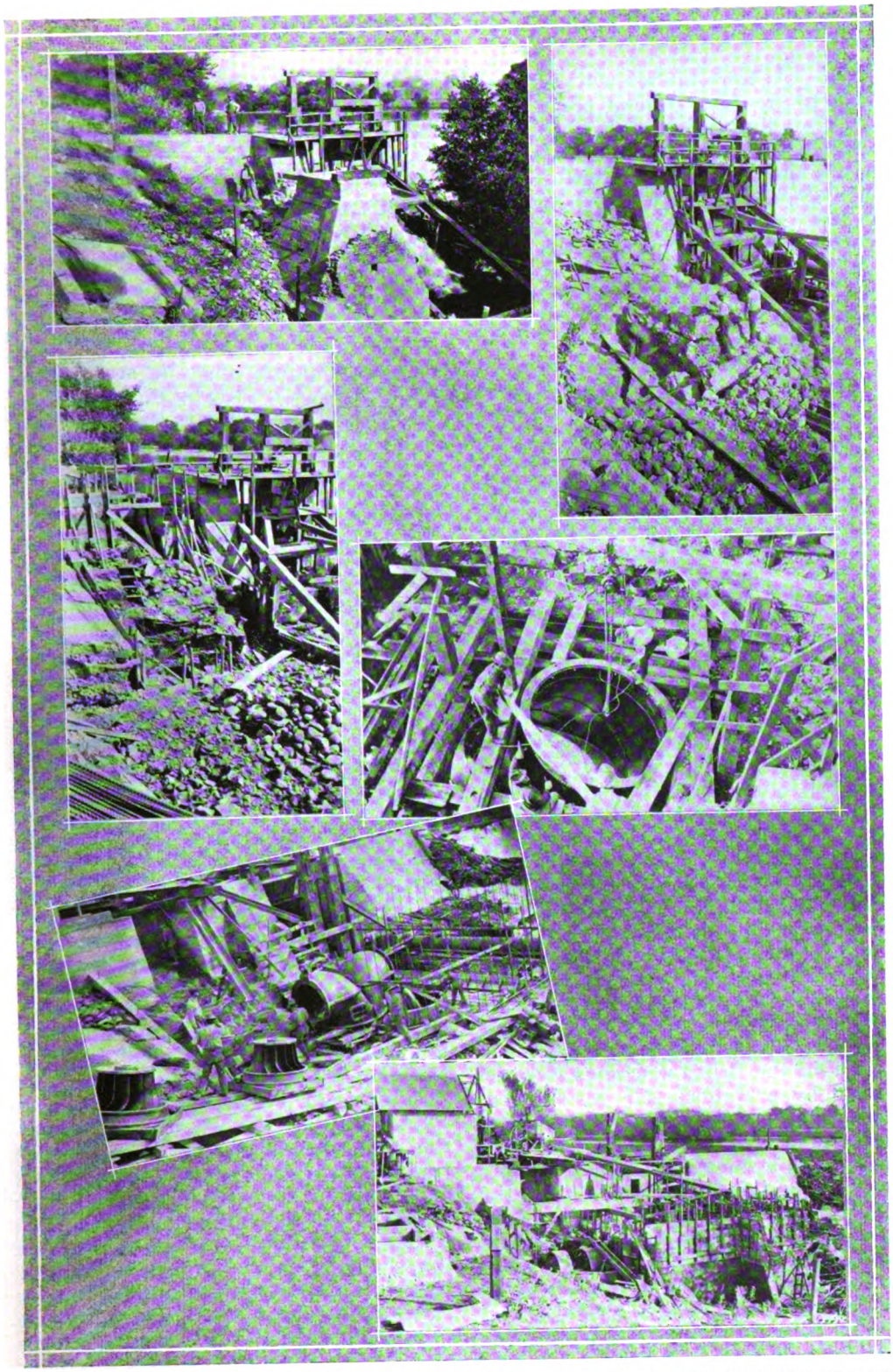

Progress pictures at Merced Falls. Reading down, beginning at the left: September 27, 1915, power house site before beginning work; October 23, building forms for concrete foundations; December 11, placing the turbine; October 4, removing old generator foundations; November 25, setting draft tube of turbine in place; December 25, erecting building and concrete walls over the turbine.

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there. A low timber-crib dam was built to create a storage pond and to increase the head, and a primitive water wheel was used to turn the millstones that ground the wheat.

In 1868 Wm. Nelson and Son, with a few small stockholders, built a woolen mill adjoining the flour mill. On the 4th day of April, 1872, the woolen mill and flour mill both were destroyed by fire. In the same year the woolen mill was rebuilt. The old timber dam was also replaced by another of the same type. On September 23, 1893, the woolen mill was again destroyed by fire, but this time it was not again rebuilt. The country about Merced Falls was at this time largely devoted to sheep raising.

A year later, 1894, we find the power applied to the generation of electricity, when the Mt. Gaines Mining Co. installed a vertical turbine to drive a 135 K. W. belted Stanley generator. Power was transmitted a distance of fourteen miles, at 10,000 volts, to the Mt. Gaines Mine, to the east.

In 1896 the Merced Falls Gas and Electric Co. installed two 75 K. W. Brush alternators, and two vertical turbines, in a pit adjoining the Mt. Gaines wheel, under the direction of Mr. Leehe, and transmitted the power to Merced at 10,000 volts. These plants operated independently until 1900, when the entire installation was taken over by the Merced Falls Gas and Electric Co.

In 1901 the old wooden dam was replaced by the present permanent concrete dam, which is more than 500 feet long and about twenty feet high.

In 1903 the Brush machines were replaced by a Bullock 225 K. W. generator, and in 1910 a new transmission line was built, of No. 2 copper on forty foot poles, insulated for 30,000 volts.

After the flood of January, 1911, the site has stood idle, although the lake above the dam has been used as a mill pond by the Yosemite Lumber Company, which operates a large modern sawmill and box factory there.

The recently completed plant consists of a turbine water wheel and two electric generators. The wheel is an S. Morgan Smith twin horizontal, single discharge turbine, of 750 horsepower at twenty foot head for open flume installation, to run at 186 R. P. M. This drives, by means of two twenty-four inch leather belts, two 225 K. W. Bullock 60 cycle three-phase, 2300 volt generators, running 600 R. P. M.

The power from these is stepped up to 11,000 volts for local distribution to the mines in the district, or if desired, the power may be stepped up again to 30,000 volts, by the substation transformers, for use in the valley below, in the Merced district.

The accompanying photographs will give one an idea of this low head plant. Whereas in our high head installations we have long ditches, surge tanks or forebays, and long steel pipe lines leading the water to the wheels, here the water passes directly from the pond to the wheel chamber.

At our Tule River plant a small stream of water drops 1463 feet, but at the Merced Falls plant the head is only twenty feet. To keep the product (quantity times head) of appreciable value, we must greatly increase the quantity with low heads. The turbine requires nearly 400 cubic feet per second, quite a respectable sized river, to generate the 750 horsepower.

Imagine a large concrete box, similar to a chalk box, but thirty feet on a side by twenty feet high, open on top, and with one side containing the gates opening into the pond above the dam. The box is built against the dam, and an eight foot circular hole in the bottom opens into a "draft tube" for discharging the spent water into the tailrace, or pond, below the dam.

The turbine, as can be seen from the cuts, stands on the floor of the turbine chamber (or box) over the circular hole. The water in the chamber, passing through the "gates" and through it the "runners," or wheels, on the shaft, gives up its energy to the revolving shaft, which passes through the wall at the right, and by means of pulleys and belts this energy is applied to the generators.

A Woodward governor controls the

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speed of the turbine, and is mounted above the two main drive pulleys. The turbine and driving pulleys are below the level of high tail water, but the generators are placed above highest head water, in the corrugated iron building at the north end of the dam.

Although not a large plant, the location of this power house, at the end of a long transmission line, will make it quite important in the regulation and maintenance of voltage. Then, too, in case of failure of, or desired work on, the Copper Mine-Merced line, this plant will make possible the maintenance of partial service on the northern end of this long line.

Construction began on the plant on September 28th, and was completed about February 1st, under the direction of the writer, who desires to express his thanks to Mr. Nelson and Mr. R. Casad of Merced for the historical data given.

Some of the force who placed the Merced Falls Power House in operation. Left to right, Operator W. C. Vorrath, Mark Webster, Louie Quinn and Fred Moore.

Great Mass of Sediment Carried in Irrigation

According to figures compiled by J. C. Allison, chief engineer of the California Development Company, based on daily tests of the water of the Colorado River passing through the Hanlon headgates in the Imperial Valley, 30,024,000 cubic yards of solid matter passed through the gates in 1914. This represents 40,532,580 tons, an amount sufficient to cover 18,610 acres with mud one foot deep.

Farmers Increasing the Use of Gas Tractors

The rapid progress in the development of the farm gas tractor has led to a movement in the United States Department of Agriculture in favor of a standard rating of the power of such machines, according to Commerce Reports. Until a standard is established, the department advises purchasers to be guided by actual results in work and fuel consumption rather than by catalogue ratings.

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Booth of the San Joaquin Light and Power Corporation with Miss Eugenia Galvin in charge of the demonstration of the Westinghouse Electric Ranges installed. The interest created in the booth was very great and Miss Galvin declared that she had so many prospective customers it was necessary to take a vacation in order to restore her voice after the close of the show.

Electric Cooking Ably Demonstrated At Recent Fresno Pure Food Show

By M. E. NEWLIN, District Agent, Fresno District

When the theory was advanced a very few years ago that in the future electricity was destined to become a factor in domestic economy as a method of cooking in competition with wood, coal or gas, even the wise were skeptical and considered the idea, if they considered it at all, as too far in advance of the times to be taken very seriously.

A few, however, continued to work independently along these lines until it was at last recognized that instead of a theoretical probability they had developed a vast possibility. There were, of course, many obstacles to be met and overcome, both from the standpoint of the consumer as to practical economy, and from that of the central station as to many other features.

This great possibility has been largely realized, as is evinced by the fact that all of the large public service corporations selling electric current are working along the line of establishing rates to meet the demands of the public for this class of service.

An example of the attitude of the public toward electrical cooking was the interest shown in the demonstration carried on at the Pure Food and Household Show at the Fresno Civic Auditorium from February 2nd to 12th.

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Booth of the Sperry Flour Company which demonstrated its products with the aid of an electric range upon which baking of all descriptions was conducted throughout the show.

Demonstrations of electric ranges were conducted at the booths of the San Joaquin Light and Power Corporation and Sperry Flour Company, and in the Globe Milling Company's cooking school. The results obtained were more than gratifying.

A practical illustration of the advantages of electricity for cooking was shown by the typical dinner prepared by Miss Eugenia Galvin, demonstrator for the San Joaquin Light and Power Corporation. This dinner was prepared for six persons, cooked entirely by electricity, and served to representatives of the company and the General Electric and Westinghouse Electric Companies. It consisted of a 5½ pound chicken roasted with dressing, six large potatoes, one peck of spinach, three dozen baking powder biscuits, a sponge cake, and coffee.

In cooking this meal a very accurate check was kept on the amount of current consumed for each operation, and every expedient possible was exercised to give the best results from an economical standpoint, along the lines of

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usage recommended to the consumer.

The method of preparing this meal was as follows: The large oven, with 1500 watt element, was used for the chicken and biscuits, the broiler oven, with 850 watt element, for spinach and potatoes, and the coffee and gravy were prepared on top element of 1000 watts, while the large oven, 1500 watt element, was used for baking the cake.

The chicken was placed in the oven and current turned on for 28 minutes. The current was then turned off and the chicken allowed to roast with the stored up heat for an hour and a quarter. After the chicken was removed the biscuits were placed in the oven and were cooked without any further heat application, there being more than sufficient stored up heat for the purpose. The spinach and potatoes were placed in the boiler oven and current applied for 12 minutes. The cake was baked in the larger oven with the current applied for a space of 18 minutes. The coffee and gravy were prepared on the top elements, which operation required 14 minutes, and a most excellent dinner was ready for service. It might also be mentioned that after the food had been removed from the ovens, the water for washing the dishes was heated in the large oven with the heat stored from the former operation.

A summary of the approximate cost of preparing this dinner is as follows:

Chicken and biscuits	700 watt hrs.
Cake	450 watt hrs.
Potatoes and spinach	170 watt hrs.
Coffee and gravy	235 watt hrs.
Total current consumed	1555 watt hrs.

Assuming a rate of 3½c per kilowatt hour, the total cost of current consumed would equal 5.44 cents.

The advantages mentioned are not the only ones assured by this method of cooking, as the saving in food alone may more than pay for the electric current consumed. For instance, a six-pound roast cooked in a gas range shrinks about one and one-half pounds, while in an electric range the loss is only about one-half a pound.

Thus a six-pound roast, costing 25c per pound, cooked by gas would shrink one and one-half pounds, at a loss of 37½ cents. Cooked in an electric closed oven range the shrinkage being one-half pound, the loss would only be 12½ cents. The current consumed would be 960 watt hours, and costing 3½c per kilowatt hour, would equal

Mrs. Dwelle, demonstrator of the Pure Food Show's Cooking School, conducting her class with the aid of an electric range, the operation of which the ladies attending were deeply interested in.

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3.36 cents. The total cost, including shrinkage, would be approximately 16 cents.

The direct advantages of this method of cooking are many and varied, besides these already mentioned. The electric range radiates practically no heat, in baking, broiling, roasting or any cooking done in the ovens. There are absolutely no odors or fumes escaping into the room. Meats retain all of their own juices and no water should be added in baking or roasting. These points of advantage appeal to the sense of economy and comfort of every housewife and gives us assurance that the electric range has established precedence over all other methods of cooking.

On account of the difference in the method of operating the electric range to that of operating those consuming gas, coal or wood, the best results to both the consumer and central station can only be obtained by educating the consumer to the little ways of economy in the use of the electric current. Realizing this, and realizing that a contented consumer works to the best advantage of the selling company, the public service corporations are, with the co-operation of the range manufacturers, establishing educational campaigns. This movement is nation-wide and the people are being given direct demonstrations with lectures, comprehensive and interesting advertising matter, and other means of enlightenment, which cannot but tend to bring the desired results.

It of course goes without comment that those who attended the dinner prepared and served by Miss Galvin at the Fresno Pure Food Show are strong converts to electric cooking, and as a guarantee of the perfection of the meal we might state that there was nothing left for late comers.

Government Expert Sees Great Future For Rice Industry in California

That rice growing is destined to become one of the leading industries of California is predicted by A. D. Torres, government agricultural expert.

Torres, who recently completed a tour of the United States, in which he studied rice growing conditions in all sections, is now in Manila under a three years' government contract to develop the agriculture of the Philippine islands. In his letter he compares the rice culture of Japan to that of California. Says Torres:

"The Japanese land compared with the California soil is much inferior. From this point of view I can not see any reason why the California rice land will not be able to compete with the Japanese on an equal footing.

"I find that the California rice suits the taste of the Japanese people. Japan is importing rice from Ragon and Suigon and California. Of 15 per cent of the total area of Japan which is available for cultivation, only 8 per cent is under rice cultivation. If we consider that the total area of Japan —that is, the Japan Archipelago alone —is about the size of California, and that she must support sixty million people from such small space, we can not help but see that the California rice has the most natural outlet to Japan."

According to Torres, rice land in Japan which has been in use for several hundred years still produces an average of 108 bushels an acre, and in some cases as high as 123 bushels. Yet the California land is superior for rice growing.

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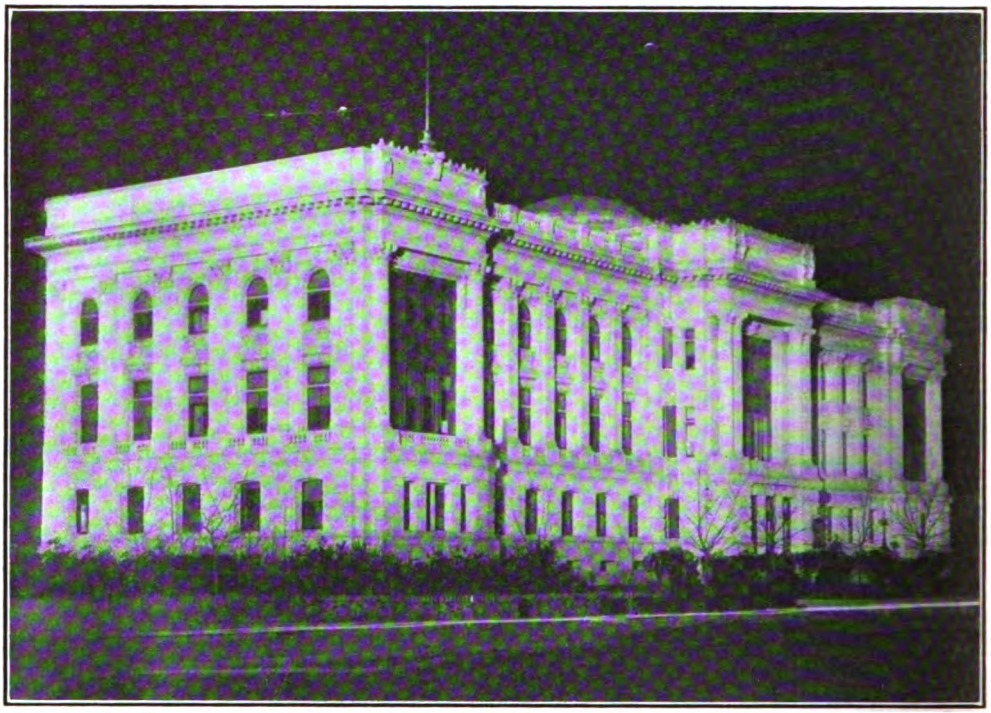

The beautiful Kern County Court House illuminated by the system of flood lighting with two projectors installed on a building top more than 1,000 feet distant

A Broadway in the Making—How Better Lighting is Creating a Brighter City

By H. M. CRAWFORD, Commercial Manager, Bakersfield District

The average town has a drug store on the corner and perhaps a clothing store, we will say next door. Few of us stop to observe how the windows of these places are lighted at night. Little thought is given to the silent salesman represented by the lighted window, yet it reaches forth its message to all who pass, under favorable or unfavorable conditions, depending on how well it is arranged and how well it is lighted. The rental value of retail stores is based largely upon the window frontage. A merchant's windows afford the best advertising medium available and are a powerful salesman if utilized fully. To secure the best results from windows they must be well trimmed, changed frequently, and in order that the goods and arrangement be seen by the prospective buyer, they must be properly lighted. Lighting is important for the reason that people are at leisure at night and walk slowly along looking into the windows—a well lighted window has the advantage of interesting the buyer when in the proper mood. In the daytime most people are too busy to look at windows.

There is a popular idea that Broadway, New York, the Great White Way, is the best lighted street in the world—instead it is about the worst so far as street lighting is concerned. From Madison Square to 66th Street, some forty blocks, there are only forty arc lights, one to the block—yet Broadway is a wonderfully brilliant street, but it is due to window lighting and

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electric signs, not street lamps. Within those forty blocks are literally hundreds of brilliant window displays flooding the great thoroughfare with light—hence the name—Great White Way. Shorn of its lighted windows and signs, Broadway, from being the night shopping center of America, would become darkest Africa.

New York led the way with its wonderful lighting but many towns and cities all over the country now have their own Broadways. Why? Because —a center of life and activity and **business,** which means prosperity for all.

Where does this business come from, you ask? From the development of the spending habit. People who stay home at night buy nothing they do not need and fail to buy much that they do need. Those eager for recreation after the day's work acquire the habit of going "up town," of studying the illuminated window displays, going to the "show," meeting friends, and so

A comparison of the methods of lighting in the windows of a Bakersfield clothing establishment. The window at the left is lighted by the new system, while that at the right is by means of the old system. Note the difference in effect obtained.

merchants have found it profitable. The hypnotic attraction which draws thousands to gaze on the lights of New York's Great White Way, also draws hundreds of people to the lesser white ways in your city and mine.

Here is a peculiar fact: When a merchant installs a modern window lighting system to lure the trade of a nearby competitor, and the competitor also lights up his windows properly to hold the **trade, both find that** they have more trade than before, the increase being created business, and when the neighboring merchants, not to be outdone, all fall in line, then we have the beginning of a diminutive Broadway find that they see more and more ways to spend their money, new and smarter clothes, new hats. They have the chance to see and buy what the merchant offers, and in buying they create a new demand among those who in turn see them—they are not content to stay in the rut and are more ready to spend a dime or a dollar on entertainment, or luxury, or living. All is the result of splendid community lighting. The creating of the "Broadway" comes first—an inducement to get the people out of their shells. Business and success follow the "White Way" and the merchants are the ones who profit.

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Striking contrast of two windows, the upper lighted by the new system and the lower by the old system. The lower window is the same as shown in the photograph, in the foreground, on page 81, before the change was made over to the new system of illumination. The perfect distribution of light in the upper picture stands out in marked contrast with the lower picture.

Let us look at the stores just mentioned. First the corner drug store has windows in which appear the usual goods and it is lighted by a large electric lamp in each window. The center is well illuminated, the ends are dark. Each of these lamps are suspended from the ceiling of the window and are in plain view from the street. The store has several bad lighting features —there is not enough light, it is poorly distributed, and, worst of all, it is in plain view so that the passerby must necessarily see the light first instead of the goods. Obviously this defeats the merchant's purpose. He cares nothing about displaying the electric globes in his windows.

The clothing store lighting is worse than the drug store, although it has really enough light. The fault here is that the ceiling of the window is studded with many lamps and the light is dazzling—one can see nothing but a blaze of light—the goods in the bottom of the window can hardly be seen

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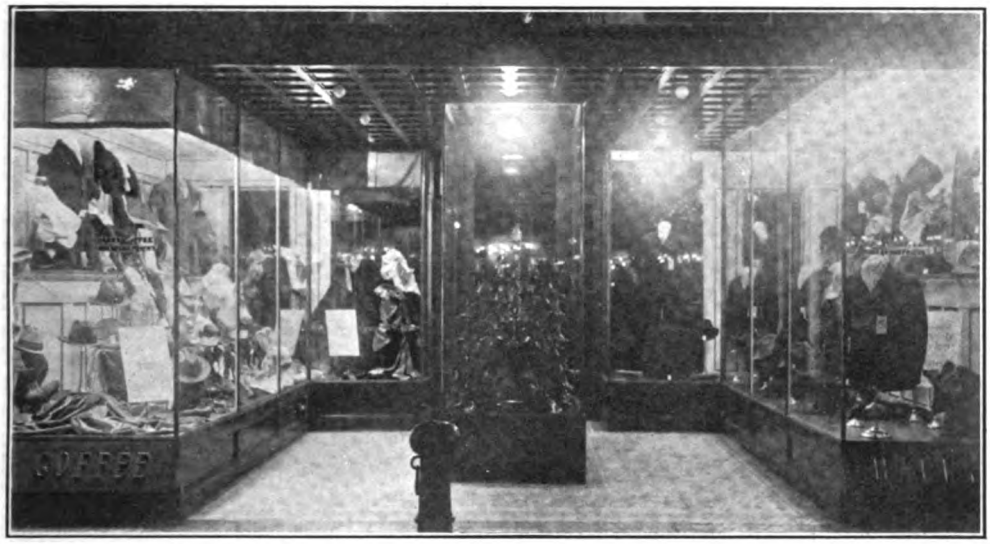
on account of the glare. We have all noticed, when riding in an automobile at night, how the headlights turn night into day on the road ahead, all is plainly seen ahead of the car until suddenly around a curve in the road appears a machine coming in the opposite direction and the headlights, directly in our eyes, almost blind us. Now really there is more light on the road ahead than before, but the direct rays in the eyes destroy this added value completely. The point I am trying to make here is—why does the average merchant throw a beam of light directly in the eyes of his prospective customer when he wants the customer to study the goods in his window? Most of us in looking into such a window would not be conscious of the reason for our discomfort. We would only turn away seeking more restful places for the eyes to the evident disadvantage of the merchant. The remedy for all this lies in concealing the window lights and adding proper reflectors to direct the light on the goods. One way to merchandising success is to use light—plenty of it—but it must be intelligently directed.



Contrast of the old and new systems of window illumination. The window on the left is properly lighted. Note the difference as recorded on the merchandise and on the sidewalk in front of the window. It is easy to be seen which is the most appealing to the eye.

Recently Mr. F. D. Fagan, of the Edison Lamp Works, delivered an illustrated lecture in Bakersfield on this subject. Invitations were responded to by many of the merchants, who were much interested. Mr. W. G. Gordon assisted Mr. Fagan by making practical trial lighting installations for several merchants during the week following the lecture. This was accomplished by removing the old lamps and replacing them with the proper number of gas filled lamps and reflectors close to the front of the windows and concealing the same with a narrow curtain tacked across the top of the window so that none of the lamps could be seen from the sidewalk. Holophane window lighting reflectors No. 983 with Form "H" holders and 100 watt Type "C" Mazda lamps were used.

Mr. Fagan and Mr. Gordon came to Bakersfield through the courtesy of the Edison Lamp Works, of the General Electric Company, and to them credit is due for many new ideas in efficient illumination.

The windows lighted in this way presented a striking contrast to the old method of window lighting, as the brilliant white light of the gas filled

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lamp brings out the true colors of the merchandise and causes the display to stand out prominently without a suggestion of eye strain to the onlooker. Many prominent merchants in Bakersfield have become enthusiastic over this lighting and are having the system installed in their places of business.

I have purposely refrained from giving technical data, but for those who may be interested, will advise 5 to 10 watts illumination per square foot of window area. If the depth of the window is equal to, or greater than its height, then the No. 983 reflectors must be tipped 15 degrees. If the window is tall but very shallow, say 10 feet high and 4 feet deep, then straight concentrating reflectors such as Holophane No. 8300 should be used to throw the light downward. Point the V-shaped part of reflector back into window to distribute the light. The cost of lamps, reflectors and wiring is less than the price of ordinary reflectors alone.

Installations of this system could be noticed a block away on account of the increased light in front of the store and on the sidewalk—one more step toward our White Way—yet the light in the window appears soft and easy on the eyes, because it was properly directed. The secret of successful window lighting is to conceal the lights from the view of those on the street, throwing all the light on the display in the window. The street will be lighted by reflected light—the overflow—we might call it.

Our experience in Bakersfield shows that some merchants were using enough current but had poor lighting. These have been changed to good lighting at the same cost. It was difficult to convince a few merchants that the representative of the power company could ever better their service and not increase the light bill. Some thought that the idea must be always to sell more power. They have been convinced, I think, that a public service corporation is desirous of serving its customers well and takes an interest in its patrons beyond the collection of the monthly account. There were other business places, of course, which were using too little light—in fact were getting no results for that reason. These were glad to increase their lighting when convinced that it was a paying proposition. Generally, there is no question but what the window lighting standard of Bakersfield has been raised, making far better appearance of both street and windows and reacting to the benefit of all through better impressions on our citizens and visitors—a brighter city.

A feature of the campaign was the lighting of the Kern County Court House with flood lighting projectors equipped with 500 watt concentrated filament lamps. The light was thrown from the top of a building nearly 1000 feet away. The source of the light was not apparent though the beams aggregated more than a million candle power, making the big structure stand out against the dark sky like a fairy palace. This building, being of white stone, presented a beautiful appearance. Local papers are advocating a larger and permanent installation.

The window lighting campaign has taught every merchant in town the modern method of lighting windows. Several stores have already installed the new system and we have active prospects for nearly 200 additional lighting units. We are making in Bakersfield a Broadway and more business for all.

The electric lighting industry earned $360,000,000 in 1915. The kilowatt-hour product is estimated at about 18,400,000,000, a gain of 1,600,000,000 kilowatt-hours over 1914. Earnings have increased $23,500,000.

Ground was broken on December 14th for a 200,000 horsepower steam power plant to be built on the river front in the town of Tonawanda, N. Y., for the Buffalo General Electric Company. The plant will cost $1,500,000.

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VALLEY DEVELOPMENT PROGRESS

Milking by machinery is now being done on the Huchting Brothers dairy at Chowchilla.

Dairymen of Kerman are taking a course evenings at the Kerman Union High School in dairying, given by H. K. Dickson.

The United States Farm Land Company will plant a large acreage in rice this season. Contractors are now preparing the land.

The Perkins Cuyama Ranch No. 2, containing about 22,000 acres, is being surveyed and divided into farms for the purpose of putting it on the market.

John W. Sward, who planted a large acreage to rice near Wasco last season, announces that he has arranged for the financing to plant 3500 acres this season.

C. A. Barlow of Bakersfield will soon leave for Washington to personally espouse the cause of the highway to Mount Whitney before the representatives of the people in Congress and government officials.

Representatives of the San Joaquin Valley Sugar Company of Visalia are making an endeavor to interest ranchers in the vicinity of Porterville in raising sugar beets. They are endeavoring to secure a planting of 500 acres.

A twenty-acre improved vineyard a few miles south of Reedley sold during the month for $10,000. The price paid, $500 an acre, is regarded as only a fair one. The vineyard lies in one of the garden spots of the valley.

On February 12th Wasco, the thriving colony in Kern County, celebrated its ninth anniversary. As an indication of the growth of the colony, perhaps the change in the public school system is the best example. Nine years ago the grammar school had eleven pupils and one teacher. Today the Wasco school system consists of a grammar school with an enrollment of 225 and a high school of 30 students, with a total teaching force of ten members.

After a delay caused by the storms, work has been resumed on the Patterson and Western Railroad. Seventeen thousand ties have just been received from Oregon and these will be laid immediately. The line is to be extended for three miles farther than was first planned.

The sugar beet situation promises to make Manteca the busiest town in San Joaquin County this year, says the Manteca Enterprise. At the present time there are 1894 acres of land signed up for beets from which the crop must be shipped through the Manteca station and the overflow station to be opened at Moreno.

Contracts have been let by the Oakdale irrigation district which, when completed, will put 6000 more acres of land under the ditch in that district. Contracts totaling $75,000 have been let, the biggest being for making a bore through Cape Horn Mountain. The bore will be one and one-half miles in length and will cost $56,787.

Tulare County's crop of Valencia oranges will probably exceed that of last year by 300 cars. The packers anticipate that a total of 1500 carloads of Valencias will be shipped. This will be the biggest crop of that variety ever shipped by Tulare County. Growers state that very little, if any, damage has been done to the fruit by the cold.

Fifteen men have been put at work on the D. A. Vaughn property east of Porterville, on preliminary work incident to the production of chromium ores to be made for the Southwest Chemical Company. The ores, it is stated, show over 50 per cent chromium and it is stated the American market absorbs from 50,000 to 75,000 tons annually, practically all of which heretofore has been imported. W. D. Chappell, the representative of the corporation, who have made contracts for the purchase of 40,000 tons of the ore, states there is an excellent chance the production will be a permanent industry.

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VALLEY DEVELOPMENT PROGRESS

Fresno and Stockton are two of the seven California cities having clearing-houses in which the bank clearings last month exceeded those of the corresponding month of the preceding year.

It is very doubtful whether there is another new settlement in the State of California that can boast of five new families within the past week. Yet this is true of McFarland. Within the past week five families have come here to make permanent homes.—McFarland Messenger.

J. S. Jackson, a widely known Southern California orange grower, has purchased a 300-acre tract of land in the well-known Gillette orange holdings north of this city, for which, according to reliable report, he paid $300 per acre, or in round figures $40,000 for the holdings.—Porterville Messenger.

Increased impetus will likely be given to the westward colonization movement by the Santa Fe system's announcement that one-way colonist fares from Chicago, St. Louis, Memphis, New Orleans, Missouri River and Mississippi River points to all Pacific Coast territory will be effective from March 25th to April 14th, inclusive.

The Stockton Chamber of Commerce has adopted resolutions condemning the action of the Tidewater Southern Railroad, or its officials, in selling or contracting to sell land along its line to Hindus, and copies of the resolutions have been sent to promotion bodies in the southern part of the county. At Manteca recently the action of the chamber was approved.

Word has been received from the Carnegie corporation by the Madera County supervisors offering to contribute $12,500 toward the cost of a library building there. A site has been selected and the supervisors have voted to maintain the library at a cost of $1250 per annum in accordance with the rules of the corporation. Plans will be prepared and submitted for approval.

A consignment of mohair wool plucked from the prize herd of Angora goats belonging to W. W. Wright was brought to this city Wednesday to be shipped to Boston.—Los Banos Enterprise.

Rural building activity is reported lively around Winton and between Merced and Livingston. Many attractive farm homes are being erected as well as commodious barns and sheds.

Approximately 25,000 acres will be sown to grain this year in the vicinity of Chowchilla. This is considerably more than was sown last year. More than 20,000 acres of that amount will be barley.

J. Frank Mitchell, of Woodlake, has purchased the Baalam citrus ranch at that place for $10,000. The ranch consists of ten acres, planted to four-year-old trees. The grove is located at the end of the Woodlake car line.—Dinuba Advocate.

Wine grape growers in the Lodi section are said to be planting cherry, plum, pear and almond trees among their vineyards as a safeguard and protection against financial loss if the liquor question meets with a decision at the hands of the people at the polls which would be detrimental to the wine industry. It is estimated that the demand for fruit trees will be far greater this year than it has been for a number of years past.

Bert Clegg of the Ullery addition will try the experiment of feeding rice to hogs. Mr. Clegg has bought twenty feeders from C. L. White, and these, together with some others which he raised, will be fattened upon paddy, cooked, with a mixture of rolled barley and some corn silage as roughage. Mr. Clegg has figured it out that rice fed in this way is better than either corn or barley fed separately and his experiment will be watched with a great deal of interest by other farmers hereabouts.—Wasco News.

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VALLEY DEVELOPMENT PROGRESS

San Francisco capitalists have taken an option on 3000 acres of land in the Traver district, northwest of Visalia, and if the deal is closed will plant the entire tract to rice.

A great deal of orchard and vineyard planting has begun in Merced County. Almonds are the favored variety in trees. Many almonds are being planted in Merced Colony at present. The planting of 12,000 almond trees, distributed over 200 acres, on the Figmond tract near Snelling, has been completed.

By the close of the summer state highway work in California will reach its lowest stage since the voting of $18,000,000 bonds for the construction of two main trunk line highways the length of the state. Already a number of assistant engineers have been laid off and by spring or early in the summer the force of engineers will be reduced to a minimum.

With the organization of the Kern County Dairy Corporation, in which all dairymen of the Wasco district are joining, the building of a creamery at that place has been assured. The corporation, according to plans which have been perfected, will lease for a period of five years to R. Langor, who will equip the plant with $8000 worth of butter and ice-making apparatus. Langor is to pay $90 a month rental and offers 3 cents more for sour cream and 5 cents more for sweet cream than Los Angeles quotations.

Orders for the 1916 crop of Oakdale almonds are being placed. The 1915 crop has all been sold, and the last payments to members of the Oakdale branch of the California Almond Growers' Exchange are expected to arrive there this week. The Oakdale Graphic states that the 1916 price will not be fixed until next summer, but that eastern buyers are so anxious to handle California almonds that they are placing orders with the association regardless of price.

The City Beautiful Committee of Madera is arranging for the beautifying of the city as well as solving the unemployed problem by the planting of potatoes on vacant lots, the work to be done by men out of jobs.

The "homestead" section, as the territory lying east of town is recently called, is fast becoming one of the garden spots of the state. As is true of all homestead sections in the land, the pioneers came to their land with but little cash and in many instances have had to make improvements as they were able. However, things are changing. A few good years have "put them on their feet" and from now on no part of the valley will see as rapid progress as this section.—McFarland Messenger.

The growth of the use of molasses in dairy and horse feeds has caused the Grange Company to conclude to install a mixing plant in Modesto. A basement 12x30 feet will be excavated and a mixing plant two stories in height built. The basement will contain hoppers with graduating feeders, which will feed the dry ingredients into a screw conveyor in exact proportion. From the conveyor they will be elevated to a mixer where the heated molasses will be mixed with the dry ingredients. The machinery is now being built in San Francisco.

Applications for two irrigation systems to water about 75,000 acres of land in San Diego and Kern counties and contemplating the impoundment of about 27,500,000,000 gallons of water, were announced recently by the State Water Commission. One application was that of the Oak Creek Land and Water Company of San Francisco for the construction of a concrete dam 120 feet long at the base to form a sixteen and one-third billion gallon reservoir in Kern County to irrigate about 60,000 acres. It was proposed to expend $600,000 for the system with a main ditch seven and one-half miles long.

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VALLEY DEVELOPMENT PROGRESS

The Merchants' Association of Turlock is planning a melon carnival for the coming season.

The Kingsburg Packing Company, Inc., declared a dividend of 12½ per cent at the termination of the season's activities.

The silver maple is to be the official tree for street planting on Magnolia Avenue in Modesto. The property owners on that street have so decided. The work is being undertaken in connection with the activities of the city planning commission.

One of the largest grain sales made in Tulare County this year was consummated the middle of the month when the Beckwith-Anderson Land Company sold 8000 sacks of barley to H. D. Beck of Tipton for approximately $10,000. The grain is for European export.

Farmers who had the courage and were financially able to hold their 1915 alfalfa hay are now reaping the benefits. Several carloads have recently been dispatched from the Land of Kerman to coast points. Market quotations for the week have been from $13.50 to $16 on the San Francisco markets. The local markets are about cleaned up and dairymen will welcome the arrival of the new crop.

The peach pits that accumulated last season at Libby, McNeil and Libby's cannery have been sold to the California Nut Products Company of Berkeley. Their manager, Stanley Hiller, brought machinery to Selma and cracked the pits, and the kernels are separated and packed for shipment to San Francisco, where they are to be used in various by-products. Principal among these is that oil known in commerce as artificial oil of almonds. After the oil is expressed, the starch of the kernel is used largely in making maccaroon paste. Most of the pits used were from cling peaches, and their preservation for cracking is more difficult than the drying and preservation of free-stones.—Selma Enterprise.

Reedley has a new industry launched by a firm making washing powder.

The farm advisers of the state accompanied by Dean Hunt of the University of California College of Agriculture and Professor D. W. Working of the United States Department of Agriculture recently made a tour of the San Joaquin Valley counties.

It was reported from Auburn, Placer County, that one ranch near that city, which had five acres in fig trees, recently shipped eleven tons of dried figs to the San Francisco market. The crop was sold for $61 a ton, dried, making the gross income of $671 for the five acres. The average yield of this orchard is about fifty tons of dried figs.

It is reported from Inwood, Shasta County, that one farmer produced 17,500 pounds of fine potatoes from less than an acre of common red soil. From the San Juan range in Nevada County, 20,000 pounds are reported from one acre; seven of these potatoes weighed fourteen pounds. Another Nevada County farmer produced 41,565 pounds from a single acre, 30,000 pounds of which were seed potatoes. Deducting the cost of producing from the estimate of the market valuation of his entire yield, the grower has a net balance of $1,344.30 from one acre of ground.

The Department of Agriculture's annual estimate of farm cattle in the country on January 1 shows 21,988,000 milk cows, an increase of 3.4 per cent over 1915; 39,453 other cattle, an increase of 6.4 per cent; 49,162,000 sheep, decrease of 1.6 per cent, and 68,047,000 swine, an increase of 5.3 per cent. The horses numbered 21,166,000, a decrease of one-tenth of one per cent, and mules numbered 4,565,000, an increase of 1.9 per cent. The total value of these farm animals was placed at $6,002,784,000, an increase of $33,531,000, or six-tenths of one per cent over their value on January 1, 1915.

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VALLEY DEVELOPMENT PROGRESS

The boys of the Madera High School agricultural class have formed a pig raising club.

At Orange Cove 435 acres of new orchard had been planted at the first of February and the prospects indicated that 1,000 acres would be the season's record.

N. O. Brown returned recently from Soda Springs, Idaho, with a car containing seventy-seven head of purebred Shropshire sheep. Brown has placed the sheep on his ranch east of Turlock.

Fourteen thousand acres of land belonging to Miller and Lux will be thrown upon the market next month. The land is located near Berenda and is the first unit along the San Joaquin River offered for sale by that firm. The land will be irrigated with pumping plants.

Seventy tons of Calimyrna figs, representing the bulk of this year's crop from the Bear Creek orchards, near Merced, were sold by the producers recently in a lump lot at a figure bringing $172 per ton, which pays a handsome profit per acre to the orchardists.

Ned Chambers of Bitterwater, while rounding up his cattle in the Tully Mountain section in the southern part of Monterey County, came on a band of wild horses. Chambers is going back as soon as the weather clears and will try to capture a few more horses. This is probably the only place in California, or west of the Sierra Nevadas, where they may be encountered.

Residents of the Rio Bravo section will go in for rice planting on a rather large scale this year because of flattering results obtained in that section last season. At this time it is not possible to give an exact estimate on the acreage to be planted there, but according to the best estimates it is in the vicinity of 500 acres. This will be divided into small plantings varying from 10 to 60 acres each.—Wasco News.

Securing $5,200 from 64 tons of prunes raised on a 37-acre orchard in the district a few miles south of Bakersfield last season, McKee Brothers have decided to plant an additional 25 acres in this profit-making fruit. They will begin planting the new orchard next week. Prunes pay better than any other fruit grown in this district, according to the experience of McKee Brothers, and with the present planting they will have about 65 acres devoted to this fruit. The French varieties will be planted.—Bakersfield Echo.

Six sections of alfalfa are being prepared for planting in the immediate vicinity of Wasco by the Kern County Land Company, making about twenty sections the company will have in in this neighborhood this year. Three or four traction engines are doing the plowing and a large number of teams are at work. The work is being rushed as rapidly as possible as the season is growing late. The company also will prepare 160 acres for the planting of rice. This tract, which lies in section 17, five or six miles northwest of Wasco, will be leased by L. F. Lavers, editor of this newspaper. — Wasco News.

Members of the Northern Tulare County Citrus Association are jubilant over the success of the work accomplished in marketing last season's output of Washington navel oranges and lemons. From forty-seven cars shipped last season, the average price per box was $1.62 net to the grower. As the groves are all young, no high averages will be found per acre, but the quality of fruit was excellent. With the successful season just completed the members are now contemplating the broadening of the association to the extent of organizing more affiliated exchanges. Packing houses will be built as the new organizations are formed, and the citrus district extends from Dinuba on the west to Orange Cove on the east.

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VALLEY DEVELOPMENT PROGRESS

The supervisors of Kings County have agreed to do their part in the building of the proposed road from Coalinga south to the Lost Hills and Belridge oilfields.

D. M. MeLemore, a cattleman of Oregon, has leased 34,000 acres from the Chowchilla Land Company and plans to engage in cattle raising in California on an extensive scale. His first move in stocking his ranch was a shipment of 524 cattle which arrived at Athlone the early part of the month.

During the year 1915 there was a noticeable increase in shipments of cream in Los Banos. The total from this station amounted to $547,500.00. While the dairymen complain that the low prices are a serious drawback to the industry, few have shown a disposition to abandon it.—Los Banos Enterprise.

The Patriquin Quicksilver Mine, located near Parkfield, is making more money than a great many gold mines in this state, says the Salinas Journal. Of late this mine has been turning out $202.50 worth of quicksilver every day. This means that a flask and a half is being obtained, and the price is $135 a flask. This mine has twelve retorts and lately struck some very rich cinnebar. It is reported that there is a six-inch vein, besides the rich values in the rock.

If reports are correct, there is on one of the Corcoran dairy ranches a Holstein cow giving 40 pounds of milk per day, testing 11 per cent, which means 4.4 pounds of butter fat, worth $1.41. The leading cow in the Tulare Cow Testing Association was a registered Jersey owned by Chas. McFarlann, which gave during the month of November 990 pounds of milk containing 58.7 pounds of butter fat, or nearly two pounds fat per day. The community of Corcoran consumes about 3,000 pounds of butter per month, of which about 85 per cent is furnished by the local creamery.

Besides winning the gold medal for the best display of navel oranges at the Panama-Pacific Exposition in 1915, Kern County captured in all nearly sixty medals for the excellent displays, eight gold medals, seventeen silver medals, thirty-nine bronze medals, and a medal of honor were secured.

Five thousand sacks of milo maize are being threshed from a half section of land between Shafter and Wasco by Ferguson and White, marking one of the best corn productions on record in these parts. The land on which the corn was grown was leased by Messrs. W. Ferguson and White from the Kern County Land Company. It was practically unimproved land yet basing the figures on $23 per ton, the present market price, the income would be approximately $7500. The land was irrigated twice. Six hundred and fifty dollars covered the harvesting bill and the threshing, together with sacks, cost about $1000, leaving the crop owners a snug balance on the right side of the ledger.—Wasco News.

A new hydraulic method of sinking an irrigation well in this county is being worked out on the Lewis ranch, six miles east of Madera along the line of the flume. A big outfit, capable of boring a well from two inches to four feet in circumference, arrived here Saturday from San Jose and was today moved to the Lewis ranch where the new well is being started. The outfit is one of the largest and most complete of any well boring machine ever brought to this county. It required a full car to bring the machinery here. A twelve-inch well will be put down and unless rock is encountered the well men expect to make from twenty to thirty feet a day. In case of rock formation, the machine is equipped with drills to go through it, after which the water under high pressure is again used. The progress on the new well will be watched with interest.—Madera Mercury.

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Independent Oil Producers' Agency Report of California Oil Operations

Following is the January report of the production and field operations of the California oil districts as prepared by the Statistical Department of the Independent Oil Producers' Agency at Los Angeles:

District	Rigs Up	Drilling	Completed	Abandoned	Producing	Gross Barrels	Daily Averages January	Daily Averages December	Daily Averages 1915
Kern River	2	5	6	..	1,485	722,016	23,291	23,095	22,177
McKittrick	1	3	13	11	263	193,161	6,230	8,606	9,824
Midway-Sunset	6	50	11	6	1,251	3,040,908	98,094	105,791	108,554
Lost Hills-Belridge	3	13	6	1	262	349,244	11,266	11,480	11,810
Coalinga	..	15	4	4	805	958,596	30,922	34,014	37,171
Santa Maria	1	7	1	..	242	336,536	10,856	12,814	12,311
Ventura-Newhall	1	15	2	1	434	92,192	2,974	2,944	2,817
Los Angeles-Salt Lake	..	..	..	..	696	150,718	4,862	5,327	5,738
Whittier-Fullerton	1	59	6	..	602	1,088,914	35,127	34,413	35,273
Summerland	..	..	..	..	102	4,500	145	145	153
Total	15	167	49	23	6,142	6,936,785	223,767	238,628	245,824
December	27	172	24	4	6,196	7,397,478	238,628		223,767
Difference	12	5	25	19	54	460,693	14,861		22,057

Shipments and Stocks

Stocks January 1st, 1916	55,977,180
January Production	6,936,785
Total	62,913,965
January Shipments	6,963,161
Stocks February 1st, 1916	55,950,804
Stocks Decreased January	26,376

Daily Averages

DAILY	January	December	1915
Production	223,767	238,628	245,824
Shipments	224,618	265,409	252,076
Shortage	851	26,781	6,252
Oil Shut In	15,000	15,000	18,000
Potential Surplus	14,148	*11,781	11,050

*Shortage

The agricultural progress of Guatemala since 1900 will be shown at a national exposition to be held during the next annual festival of Minerva at Guatemala City next October. The exhibits will include all kinds of grain, fruits and vegetables, as well as coffee and products of sugar cane.

Sugar amounting to 1,022,452 bags, valued at $10,666,159, was invoiced from the American Consular Agency at Caibarien, Cuba, for the United States during 1915, according to Commerce Reports. For 1914 the quantity was 1,026,512 bags, to the value of $7,268,943.

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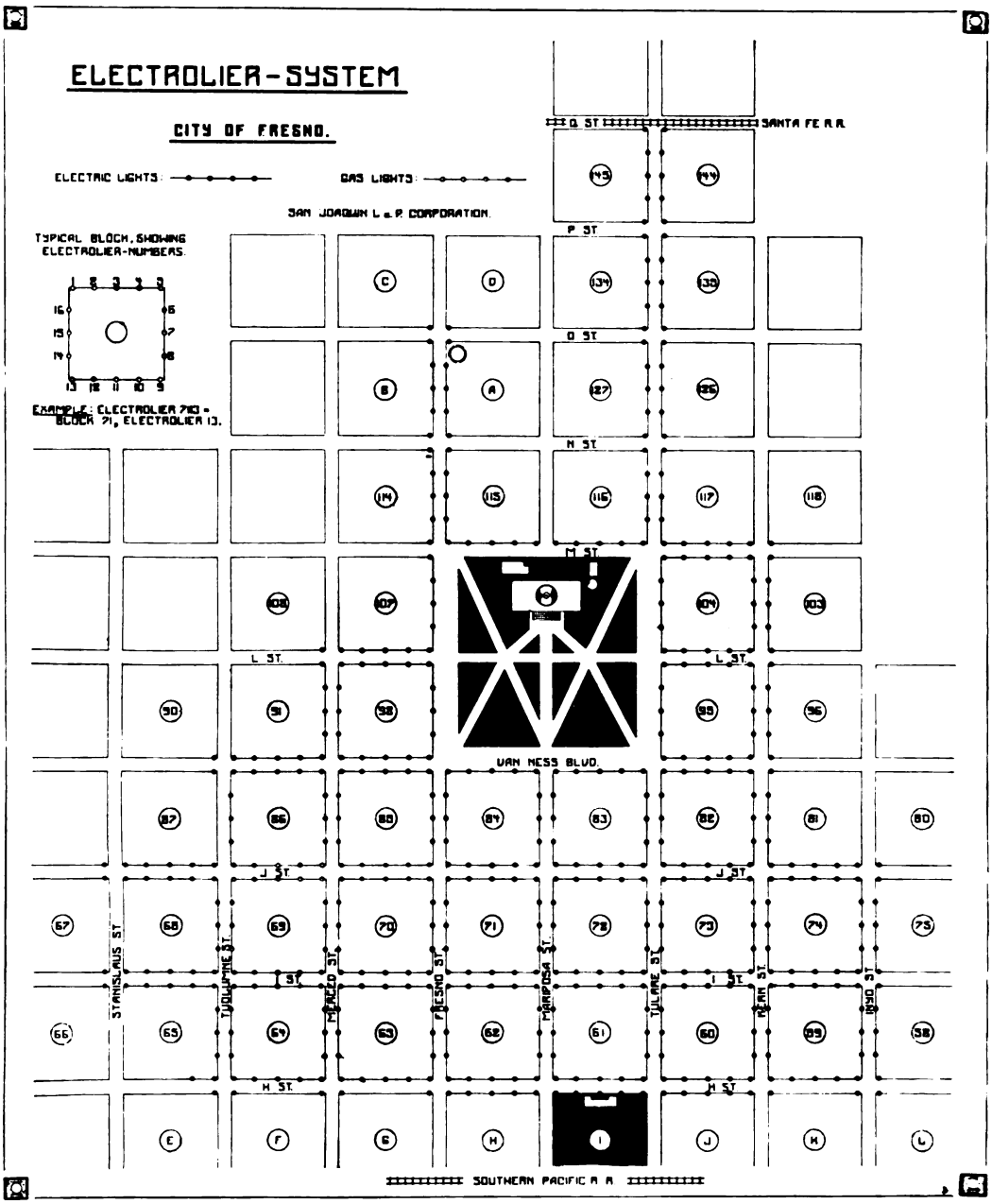
Electrolier System Covers Fresno's Business District



Reproduction of map of the new electrolier system of the City of Fresno drawn by George Bauwens of the Fresno office. The map gives an excellent conception of the thoroughness with which the business district of Fresno is covered by the new lighting system. The entire downtown district, with the exception of two frontages, one on J Street and the other on Tuolumne Street, which previously had gas lights, is included in the system and the City Council of Fresno now has the proposition before it of voting these blocks into the electric system. Fresno's system of illumination is held up as a model by enthusiasts in other cities in the valley who are advocating similar systems for their loca'ities.

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WHO AM I? WHAT AM I?

I am the foundation of all business.

I am the fount of all prosperity.

I am the parent, most times, of genius.

I am the salt that gives life its savor.

I am the sole support of the poor.

The rich who try to do without me deteriorate, languish and usually fill premature graves.

I am the primeval curse, yet a blessing that no healthy man or woman can be happy without.

Nations that woo me ardently rise; nations that neglect me die.

It is I who have made the United States what it is today. I have built her matchless industries, opened up her rich minerals, laid her incomparable railways, reared her cities, built her skyscrapers.

I have laid the foundation of every fortune in America, from Rockefeller's down.

I alone have raised men up from the ranks and maintained them in positions of eminence.

I am the friend and guide of every worthy youth. If he sticks close to me, no prize or place is beyond his reach. If he slights me, he can have no enviable end.

I am the sole ladder that leads to the Land of Success.

Sometimes men curse me, seeing in me an arch enemy, but when they try to do without me life turns bitter and meaningless and goalless.

I must be loved before I can bestow my greatest blessing and achieve my greatest ends. Loved, I make life sweet and purposeful and fruitful.

Fools hate me; wise men love me.

Savages, some rich men and many rich women shun me—to their undoing.

The giants who fill the presidential chairs of our railroad systems, our great industrial organizations, our colossal mercantile establishments and our institutions of learning, almost without exception, owe their places to me.

I can do more to advance a youth than his own parents, be they ever so rich.

I am the support of the millions; indirectly, the support of all.

I am the creator of all capital.

Wealth is me stored up.

I am represented in every loaf of bread that comes from the oven, in every train that crosses the continent, in every ship that steams over the ocean, in every newspaper that comes from the press.

I am more zealously cultivated in America than in most other countries, especially by men of wealth.

I am sometimes overdone—voluntarily by the ambitious, involuntarily by the oppressed and the very young.

But in moderation I am the very oxygen of the ablebodied, even though some, sure of my constancy, look upon me as loathsome.. A little taste of my absence quickly brings them to their senses.

My followers among the masses are becoming more and more powerful every year. They are beginning to dominate governments, to overthrow anachronistic dynasties.

I am the mother of democracy.

All progress springs from me.

The man who is bad friends with me can never get very far—and stay there.

The man who is good friends with me, who is not afraid of me, can go —who can tell how far?

Who am I?

What am I?

I AM WORK.

—From Finance Business and the Business of Life.

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San Joaquin Light & Power Magazine

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I. W. ALEXANDER, Editor and Manager

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VOL. IV FEBRUARY, 1916 NO. 2

Home Course in Electricity in This Magazine

In this issue of the Magazine is the first of a series of E-lecturettes, or little electrical lectures, dealing with eight great men who were pioneers in electrical research. A brief historical sketch is given of each, and how they contributed to the development of electricity. This series of articles is in reality a home course in electricity, and if you will read each one and then save them for future reference, you can easily master the mystery that surrounds the use of the principal technical terms of the industry. The development of the industry is traced through the lives of these great men, and after a careful reading of the series you are sure to know all about electricity as it is used today.

Success of Electrical Prosperity Week Assures Another

In response to the demands of the electrical industry throughout the country for another great electrical week, the Board of Directors of the Society for Electrical Development at its annual meeting January 24th, held at New York, decided upon such a week, the official name and date to be decided later. Results of Electrical Prosperity Week campaign were shown as evidence of the success of the big 1915 campaign, and greater possibilities for the 1916 campaign.

Life Insurance Writers Doing a Good Service

Insurance is a form of business which may be called mutual philanthropy. Life insurance is conducted on strict business rules, it is mathematically exact in its calculations, but by its nature it does more real good than any other business because it furnishes the means by which a man can protect his family and dependents after he is gone.

The man who is "selling life insurance," as the phrase is, is really urging and assisting a man to provide for his family so that the uncertainty of life is discounted.

For instance, a man's income may be such that he can estimate that in twenty years he will have accumulated an estate of $10,000—if banks do not burst or factories burn, or if he does **not** die. Life insurance makes it possible for him to provide at once an estate of $10,000 (or for any amount), so that if he should die the day after his policy is delivered his family would be left provided for.

This is possible because of the mathematical, scientific accuracy of life insurance.

It is a matter for comment whether or not the public generally realizes the very great good which life insurance writers are doing, the effective social value of their work.—Los Angeles Herald.

Book Review

We have received for review another technical book from Prof. F. E. Austin, of Hanover, N. H. It is entitled "Examples in Magnetism, Second Edition, for Students of Physics and Engineering."

It is a book of ninety pages, in green leather covers, with a number of illustrations and diagrams to elucidate the text. The student is supposed to possess the equivalent of a high school education, for the subject is treated algebraically and trigonometrically.

The subject is carefully and thoroughly explained, recourse being had

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more to reasoning than to the applying of an army of equations to the solution of problems.

The trigonometric relations are first treated, then units and their equivalents, and then problems in mechanics and magnetism follow.

We rather like this excerpt from page 21: "The memorizing of all the different relations between the units in the English system and those in the Metric system is unnecessary.

"The relation between the inch and the centimeter is the only relation that need be remembered, since all other relations of **linear** units, units of **area,** and units of **volume,** may be readily **computed,** from the fundamental relation of the inch and the centimeter."

At the back of the book tables are inserted, giving the values of "H" "V" and the magnetic variation at various cities in the United States; also natural trigonometric functions and metric equivalents.

The book finds its principal use in the class room, bearing more upon academic than practical lines.

A. S. K.

Work—Edison's Recipe for Health and Happiness

"The way to be happy and healthy is to be busy all the time. I find that as I approach sixty-nine I have just begun to live. If you are busy you don't have time to grow old. I don't work by the clock and accordingly I don't feel that I am getting any older. I work till I finish a thing, and then," here Mr. Edison smiled, "if there is nothing else to be done, I go home.

"I hope that everyone will feel as young and as pleased with life as I do when their sixty-ninth birthday comes along."

Asked for a little birthday talk, the above is what Thomas Alva Edison had to say Friday, February 11th, while he was celebrating his sixty-ninth birthday by working in his laboratory at Orange, N. J.

The years seem to rest lightly on the great inventor. He is still hale, hearty and active and as deeply interested in what the coming year has in store as a youth with all of life ahead.

"The future means as much to me at sixty-nine as it does to you at twenty-five, young man," said Mr. Edison to a young friend not long ago.

In other words, Edison is "still going strong" at sixty-nine. Not a day passes that he does not spend from twelve to eighteen hours in his laboratory. He shows no signs of slowing up the pace he has held for over fifty years. He is alert and not a detail of the business around him escapes his eye and attention.

How the Farmer Makes His Living

Ten thousand correspondents of the bureau of crop estimates in the Department of Agriculture have reported what they sold off the farm in a typical year. Taking all the reports together, out of every hundred dollars' worth sold, $40 represented crops, $36 live animals, $20 the products of animals —such as milk, butter, eggs—and $4, miscellaneous items.

This is the national average, from which different sections show a wide variation. In the cotton belt, for example, out of each hundred dollars' worth of production sold, $75 was crops, $14 live animals, $7 animal products and $4 miscellany; while in New York $53 of each hundred was animal products, $14 live animals, $27 crops, and $6 miscellany. In Vermont only $10 out of the hundred was crops. In Iowa $63 out of the hundred was live animals, $12 was animal products, and $22 was crops.

If these correspondents are really representative, then less than half the average farmer's sales are of raw material—namely, crops. That is a very good showing. Selling crops often means depleting the soil; selling animals and animal products means enriching or at least maintaining it. Yet what is profitable in one district may not be so in another. Georgia's 75 per cent for crops may be more profitable for her than New York's 67 per cent for animals and animal products would be.

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What Eight Great Men Did for Electricity

Beginning a series of E-lecturettes dealing with the lives of pioneers in electrical research and how each contributed to the development of electricity. The men are Alessandro Volta, Andre Marie Ampere, George Simon Ohm, James Watt, Michael Faraday, Lord Kelvin, Benjamin Franklin, and Thomas A. Edison. Their stories will appear, in the above succession, one at a time in following issues of this Magazine.

No. 1

ALESSANDRO VOLTA

The Volt, Unit of Electrical Pressure

The term volt (v) owes its name to Alessandro Volta, inventor of the electric battery. Volta was born at Como, Italy, February 18, 1745, in a house where the Volta family had lived for more than 300 years. When a child, strange as it may seem, he was very backward. He was thin and pale, and other little boys thought him dull, indeed. He was four years old when he spoke his first word, "no." From the time of this "event," however, his mind seemed to turn entirely to the wonders of nature. Many times as a child he almost lost his life in exploring caves and odd places where people never went. At sixteen he wrote poetry, and at seventeen he won prizes in philosophy. At eighteen the famous Abbe Nolet, impressed with the boy's knowledge, had him write essays on electricity for the great men of the day, because people knew very little about this mighty force in those times.

As a young man Volta went on long trips into other countries, and once in 1752 he met Benjamin Franklin. In London, Berlin and Paris he was given all the honors the world's great men received. The first consul founded the Volta prize, which was once conferred on Alexander Graham Bell, inventor of the telephone. Bonaparte gave Volta a sword and made him a senator of Lombardy. The emperor took the same kind of liking to Robert Fulton and gave Fulton 10,000 francs to help the Yankee to keep up on French soil his experiments with submarine boats. It is told of Bonaparte that he once visited the National Institute and found there a laurel wreath on a bronze tablet on which were the words, "Au Grand Voltaire." The emperor erased the last three letters, thus making it read, "To the Great Volta."

Volta really had nothing more to do with what is now called a volt than dozens of other men of science. Volta found out a lot of things electricity could do, but this was long before anybody dreamed that almost everything in the world can be run by electricity and before it was decided its power could be measured. It was when the scientists got together in later years and decided to give names to what they had learned about electricity that they picked out an electrical unit of pressure and called it a volt. This was long before Mr. Edison was born, and so we find none of those units named after the famous wizard of Menlo Park, who first made it possible for everybody to use the electric light, the talking machine and the "movies."

The fact that you can not pick off a chunk of electricity and hold it in your hand and poke it with your finger has stirred up a whole lot of mystery about what really now is a very simple thing.

One of the first things the fathers of electricity learned was that there is a force "from behind"—pressure in electricity.

You get an idea of what is meant by pressure when you remember the garden hose playing over the lawn. When it only "half worked" and threw a stream only a little way you said it

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lacked "pressure." As the pressure was greater the hose "worked" better. This pressure was the power "back behind" in the water pipe. It is always there, but cannot show itself in action until you turn on the nozzle of the hose. Then it tries to escape, the power "back behind" pressing the water on and out. Electricity flows exactly the same way, except that you cannot see it, although you behold what it does. The second you "turn on" the switch the electricity flows; the power in the line is always there seeking to be free and at work.

Nowadays it is very simple to measure this electric pressure. So if you have a wire filled with electricity, instead of the garden hose filled with water, and want to make an electric vacuum cleaner go you will understand that you must have an electric current of just enough strength or pressure enough to make the little wheels turn and keep revolving. Nearly all house currents have 110 volts pressure.

A volt, then, is the pressure that is needed to force a current of electricity of a certain quantity through a wire of given resistance, or, to speak in scientific terms, a volt is the pressure required to force one ampere of current through a conductor having one ohm resistance. These terms will be fully explained in the succeeding E-lecturettes. These are judged by the size of the wire, the distance to be traveled, and so on, and will be explained in the succeeded "E-lecturettes." So if you save all these "E-lecturettes" for your home course you are sure to soon know all about electricity as it is used today.

(Next E-lecturette—The Ampere, Unit of Electric Current Strength.)

DEVELOPMENT IN ELECTRICAL CIRCLES

Two new hydro-electric stations will deliver 25,000 K. W. to San Francisco territory.

Twelve new apartment houses recently erected in Salt Lake City have been equipped throughout with electric ranges.

Bonds have been passed by the Twin Cities of Graymont and Summit, Ga., for a jointly owned electric plant to be erected midway between the two towns.

The Electric Contractors' Association of Liverpool, England, has decided to train a number of women in electrical work in order to release men for military duty.

Modern large office buildings would be quite impossible without electricity. The new Equitable Building in New York City, the largest office building in the world, is completely electrified. Electricity is used for lighting the building, for the fast elevator service, and for a number of other things.

Electric heaters are used to keep frost from show windows.

Vacuum cleaners are now used in large factory buildings as well as the home.

A large electric range has been installed in Wellesley College, Wellesley, Mass.

A wide variety of small ear phones, for the deaf, have been recently placed on the market.

It is estimated that there are about 2,000,000 horsepower of undeveloped water power in Vermont.

A new system of "flood" lighting is now used to illuminate large and important buildings at night.

A toy electric range, which can actually be used for cooking without danger of fire, is the latest for little women.

The General Electric Company has perfected new and more powerful gas-electric locomotives for the "Dan Patch" line.

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Housewives Learn Economy By Reading Electric Meter

It is hard to account for the fact that most users of electric current seem to regard the meter with a feeling either of awe or apathy and often with distrust.

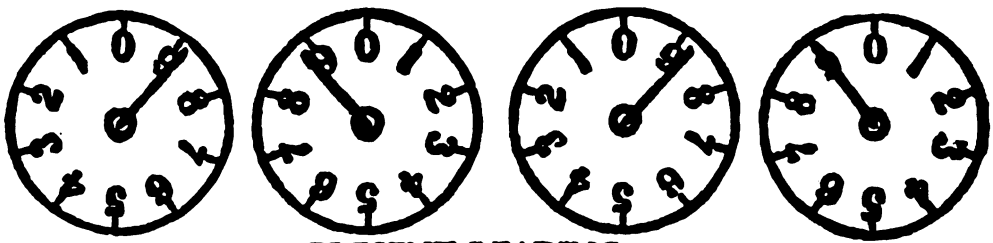
Good housekeepers, who would not pay a butcher's or grocer's or milk bill without checking it up, do not think of reading the electric meter for themselves, or realize that, by taking a daily or even weekly record, they can keep close tab on changing requirements and guard against repetitions of wasteful carelessness.

Electric energy is measured in watt-hours. A kilowatt hour equals 1000 watt hours, and it is in this unit that most meters register and upon which service charges are based.

joining neighbor, the reading is extremely simple.

The upper four dial meter has its pointers set in position to read 8889. The way to take this present reading is as follows:

The pointer on the first right hand dial points to 9. Write down the figure 9.

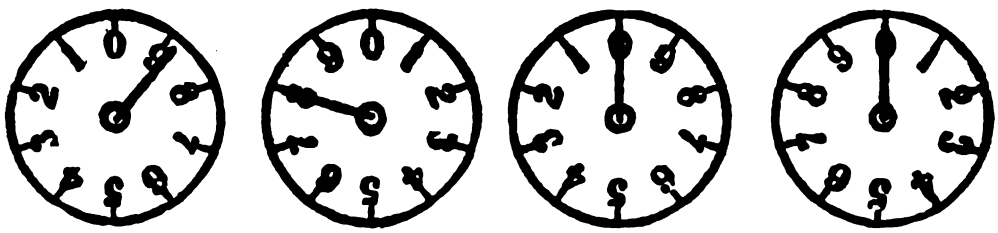


PRESENT READING 8889

Then read the dial to the left. This pointer is between 8 and 9. Write down the figure the pointer last passed, which is 8, to the left of the first figure you wrote down. This gives 89.

Then read the next dial to the left. This pointer is between 8 and 9. Write down 8 to the left of 89 and you have 889.

Then read the next dial to the left.



PREVIOUS READING 8800

On the counter-face of the meter are four small dials, as shown above. The hand on the one on the left reads thousands, the next to the right hundreds, the next tens, and the last on the right units. If it be remembered that the hand on each dial revolves in an opposite direction from that of its ad-

This pointer is also between 8 and 9. Write down 8 to the left of 889 and you have 8889, which is the present reading of this meter.

To find out how much current has been consumed during a certain time, whether it be a month, a week or a few hours, all you have to do is to read

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the meter at the beginning and at the end of the period, and subtract the first amount from the second.

In this case, if the previous reading was 8800, as shown on the dial below, marked Previous Reading, then the difference will be 8889 less 8800, which is 89, and the number of units consumed between readings.

The cost of using any light, heat or power device is equal to the rate at which current is consumed in watts, times the number of hours during which it is operated, times the unit rate charged for current, divided by 1000.

For instance, an eight-inch fan is using up about twenty watts. If used for ten hours, with current at ten cents, it would cost to operate: 20x10x8 divided by 1000, which is 1.6 cents.

Interesting News In Electrical Circles

According to the latest statistics on the electrical industry in Spain, there are 992 plants furnishing electric lighting for public use and 978 such plants for private use; 125 electric plants supply motor service. There are six electric lamp factories, of which four are devoted to making other electrical supplies.

A small X-ray machine is now used in dentistry for locating root canals, erupted and impacted teeth, etc.

A number of electric heaters have been developed for private garages to keep automobiles from freezing up.

Electricity has been a big factor in cheapening water supplies for towns and cities, and its employment is rapidly growing.

The production of copper in the United States has increased more than twenty-five fold since 1880. The production in 1913 was 1,652,000,000 pounds, valued at $255,500,000. The world's production of copper is approximately 2,211,000,000 pounds, of which the United States produces 60 per cent, Europe 12 per cent, Canada and Mexico 8 per cent, South America and Cuba 7 per cent, and all other countries 12 per cent. In 1913 the United States consumed about 41 per cent of the world's output of copper or about 65 per cent of her production from native ores.

A few years ago electricity on the farm was a novelty. Today there are any number of farms where electric light and power are available. A complete electric plant can be installed for a few hundred dollars. They are practically automatic in action and require little attention. They take up very little room in the cellar and the current can be used to light all the farm buildings, for small heating and cooking devices in the home, and for electric fans, vacuum cleaners, etc.

A dispatch from Berlin announces the invention of an electro-magnetic hand for the convenience of disabled soldiers. The hand operates with an unusually powerful battery which can be carried by the operator, making it unnecessary for him to be near an electric current in order to magnetize the "hand." The invention, it is said, can perform all the functions of the human hand and others besides. The current is regulated by a switch operated by hand or foot. It is hoped that the invention will solve the problem of livelihood for many crippled soldiers, enabling them to engage even in trades requiring considerable manual dexterity, such as carpentry. By its use the manipulation of knife and fork and similar instruments is easy.

It is only a matter of a short time before electric power lines with numerous lateral branches will extend continuously from Boston to New York, from New York to Albany and thence to Niagara Falls, and from New York to Philadelphia, Baltimore, Washington, Richmond, Pittsburg and to points in Ohio and even further west, according to the Engineering Magazine. These great interconnected arteries for electric energy will be fed from numerous generating plants, and every demand for power within reach of their lines will be supplied from the vast unified system.

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Poor Little Fellow

A Canadian newspaper calls attention to a nursing bottle advertisement that concludes with the words: "When the baby is done drinking it must be unscrewed and laid in a cool place under a tap. If the baby does not thrive on fresh milk it should be boiled."

Habit

The Doctor: "I have to report, sir, that you are the father of triplets."

Politician: "Impossible! I'll demand a recount."

All in the Training

"For the making of billiard balls 500 elephants are needed every year," said the famous big game hunter in his lecture on India.

"How strange," whispered Mrs. Winsome to the lady who sat next, "that people can teach such great beasts to do such delicate work!"

Wise Missouri

"Why," asks a Missouri paper, "does Missouri stand at the head in raising mules?"

"Because," says another paper, "that is the only safe place to stand."

Days of His Babyhood

A kilt of the Highlander Pypres,
Who tried to say "Przemysl" and "Ypres,"
Cried out, "Holy zounds!
I ain't uttered such sounds
Since I was a babe and wore dypres."
—Chicago Tribune.

Do You Blame Her?

"Why do you feed tramps who come along? They never do any work for you."

"No," said the wife; "but it is quite a satisfaction to see a man eat a meal without finding fault with the cooking."

Sure Enough Chance

A young man who last June received his diploma has been looking around successively for a position, for employment and for a job. Entering an office, he asked to see the manager, and while waiting he said to the office boy:

"Do you suppose there is any opening here for a college graduate?"

"Dere will be," was the reply, "if de boss don't raise me salary to t'ree dollars a week by tomorrow night."

Folly to be Wise

The archbishop had preached a fine sermon on married life and its beauties. Two old Irish women were heard coming out of church commenting on the address.

"'Tis a fine sermon his Rivirence would be after giving us," said one to the other.

"It is, indade," was the quick reply, "and I wish I knew as little about the matter as he does."

Not by Arithmetic

"Now in order to subtract," the teacher explained, "things have always to be of the same denomination. For instance, we couldn't take three apples from four pears, nor six horses from nine dogs."

"Teacher," shouted a small boy, "can't you take four quarts of milk from three cows?"

Unpreparedness

Two suburban mothers met on the train one day, and the topic of their conversation was their daughters.

"How did your daughter pass her examination for a position as teacher?" asked one.

"Pass?" was the answer. "She didn't pass at all. Maybe you wouldn't believe it, but they asked that girl about things that happened long before she was born."

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In Wrong Place

Said a young masher recently: "I was walking with a girl on that moonlight night, put my arm around her and then I got scared. The girl didn't; they never do. I can hear her now as she said: 'Well, why don't you kiss me?' I said: 'I can't; I've got sand in my mouth.' She said: 'Swallow it; you need it'."

What It's Made For

Talking of lessons in the school of adversity, a bank president, recently said, in discussing the subject: "The best lesson I ever got was from a girl I had been dancing with. I thought I danced pretty well, and so when I got through I said to my girl: 'What a splendid floor to dance on.' She replied: 'Why don't you dance on it, then, and keep off my feet?'"

Came Back

Village Storekeeper (as pastor executes a masterly retreat from his store): "Dinged old hypocrite! This is the same lead quarter I put in the collection last Sunday!"

Begin Over Again

St. Peter: "Have you ever kissed a girl?"

Shade: "No sir."

St. Peter: "Has a girl ever kissed you?"

Shade: "No sir."

St. Peter: "What are you doing here?"

Shade: "Well, I'm dead."

St. Peter: "Dead? You haven't even lived."

The Current of Their Thoughts

"Do it electrically," quoted the Beltzhoover Boob as he lamped one of the transparencies that adorned the downtown streets.

"Watt?" inquired the Dormant Damsel.

"Your sparking."

"Sir, you are insulating," she rejoined, as she adjusted her switch and looked up Wood Street for a car that would take her home.

Forearmed

Terrence appeared at the club the other day with a radiant smile.

"What's the joke?" asked a friend.

"Well, yez see," Terrence explained, "O'Brien is always slappin' me on the chest and breakin' me cigars. But Oi'll be aven with him this mornin'. Oi've a stick of dynamite in me cigar pocket this toime!"

No Acorn

When James A. Garfield was president of Oberlin College, a man brought for entrance as a student his son, for whom he wished a shorter course than the regular one.

"The boy can never take all that in," said the father. "He wants to get through quicker. Can you arrange it for him?"

"Oh, yes," said Mr. Garfield. "He can take a short course; it all depends on what you want to make of him. When God wants to make an oak he takes a hundred years, but he takes only two months to make a squash." —Christian Register.

Locating the Blame

While on his vacation a railroad manager had his attention unexpectedly called to a matter requiring the expenditure of a large sum of money. A letter was necessary, and he found, after considerable trouble, that the little town possessed a stenographer. The magnate blamed the road's financial expenditure on the Interstate Commerce Commission. "The fault," he dictated to his painstaking stenographer, "is entirely due to the I. C. C." When the letter was finished this is what he read: "The fault is entirely due to the icy sea."

Not An Ordinary Fisherman

"Did you catch any fish this morning?"

"No" (scornfully).

"Well, you are truthful, anyway, which can't be said of all fishermen."

"As to that, perhaps you might have called them fish, but I wouldn't. The biggest one I got only weighed twelve pounds."

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"Sure Pop and the Safety Scouts"

ADVENTURE NUMBER THIRTEEN

Dalton Patrol

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The next few weeks were busy ones for Bob and Betty Dalton. The plan was a big one—the Safety Scouts of America. Growing out of an idea planted by Colonel Sure Pop, it had sprouted and grown surprisingly fast. Already the news was spreading like wildfire among the boys and girls all over the city.

Joe Schmidt was out again, his head as good as ever. George Gibson, always brim full of energy and enthusiasm, had set his heart on becoming a Safety Scout Master and heading a troop of his own. Even Chance Carter, hobbling about on crutches, had caught the fever of Safety Scouting and was making all sorts of plans as to what he would do when his broken leg got well.

Chance really had changed, somehow. The twins supposed it was all due to his accident, but the real reason was Colonel Sure Pop. Chance seemed almost magnetized by the little Colonel and never lost a chance to be near him.

"Honestly now, Colonel," he owned up to Sure Pop one day, "I'd read so many stories about reckless heroes and all that, I got in the habit of thinking I had to be reckless. Story books seem to make out that it's a brave thing to risk your life—and wasn't that exactly what Bob did when he found that live wire?"

Sure Pop laid an understanding hand on Chance's shoulder.

Listen, Chance! You've caught only half the point, that's your main trouble. It is a manly thing to take a risk—when it's necessary. When somebody's life is in danger, it's the manliest thing on earth to take a risk for the sake of saving it. That's why Bob's act in patrolling the live wire earned him a Safety Scout Button—the lives of those smaller boys were in danger, to say nothing of anybody else who might blunder across the wire just then—that's where the difference comes in."

"That's so. I never thought of it in just that way."

"I know you haven't. When you stop to think it over, you see it's a fellow's plain duty to take a chance when it's necessary, but it's downright foolish to do it on a dare. One thing about Bob's live-wire adventure I don't believe even he realizes," added Sure Pop. "It was that hurry-up patrol of small boys that he threw out around the live wire which really gave him the idea of how to organize the Safety Scouts of America. I knew the idea would strike him and Betty sooner or later."

Chance looked admiringly at the little Colonel. What a wise Scout he was, sure enough, as keen and clever at reading signs of the trail as any Indian fighter that every stepped in deerskins!

The boy looked longingly after the Safety Scout Patrol, which was just starting off on an "observation hike,'

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as Bob called it. Part of the training Bob had laid out for his men was an hour's brisk walk, after which each Safety Scout wrote out a list of the unsafe things he had noticed while "on the trail."

"There's one thing that stumps me, though," said Chance. "How did Bob know that was a live wire?"

"He didn't. He simply had sense enough to treat all fallen wires as if they were alive. See? Better safe than sorry. Just the same in turning on an electric light; it may not harm you to touch an iron bedstead with one hand while you turn the light on with the other—but it's taking a chance. Same's the fellow who turns an electric bulb on or off while standing in a bathtub; he may go on with his bath in safety—and then again he may drop lifeless in the water.

"It's a good deal like the gun that isn't loaded, Chauncey. There was a lad, you know, who found a gun was dangerous without lock, stock or barrel—his father whipped him with the ramrod! A real Scout knows how to take care of himself—and of others. And that's especially true of Safety Scouts."

"Well, Colonel," said Chance, reaching for his crutches and rising painfully to his feet, "I'm for it! Perhaps if I make good, the fellows will quit calling me Chance and call me either Chauncey or Carter, I don't care which—but Chance makes me sick!"

"Here's to you, Carter!" said Sure Pop, with a hearty handshake. Again came that smile of satisfaction as he watched the boy hobble off on a slow "observation hike" of his own. In Carter's mind, too, the big idea was taking root.

Ten days later, Colonel Sure Pop was reviewing Dalton Patrol.

"Safety Scouts," he said, saluting the even ranks drawn up before him, "your Colonel is proud of the work you're doing. These 'observation hikes,' as your Scout Master calls them, show better than anything else how much more alert you are to danger signs than you were a month ago.

"Now, I've been sizing up these risks as covered by your patrol reports. They seem to be of three kinds—home, street, and railroad risks.

"Nobody can study these reports without seeing that our work is plainly cut out for us for the next few months. Charity and every other good work begin at home—though they end there only with the weak-minded! So our work in Safety patrolling will naturally begin in our homes and with ourselves, and will begin with the risks which these reports show to be most common. Let me read you a few of the common risks reported by the Scouts of this patrol:

"Matches; left on floor where they may be stepped on; or where mice may nibble them; or next the stovepipe or chimney; or thrown down before the last spark is out.

"Celluloid things; brushes and combs handled near the gas jet, where they may burst into flame.

"Kerosene: poured on the fire to make it burn faster (three bad cases of burns reported from this cause alone).

"Gasoline; left near a flame, or anywhere except clear outside the house.

"Gas; lighting oven of gas stove without first opening oven door; leaving gas jet burning near window, where breeze may blow curtains across (five fires started that way during last month).

"Electric wires; loose wires crossing, which often cause fires.

"Bathers; venturing too far out in deep water. In nearly every case, it is the rescuer who drowns. Never

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take a chance that may cost another's life.

"Safety pins; left open within baby's reach. You all know what happened to Mrs. Fuller's baby girl two weeks ago, all through an open safety pin.

"Hot water and grease; left standing where children may get into them.

"Dogs; left unmuzzled and running loose.

"These are only a few of the common dangers shown in your scouting reports. So far, our work has been hunting out these risks and listing them. From now on, we'll fall to with a will and set them right as fast as we can, in our own homes first and next among our neighbors.

"Just one word of caution before we take up this new patrol duty. Let's be careful how we go about setting these things right. Remember, we can catch more flies with honey than with vinegar, so let's not give people the idea we are criticising them—just suggesting.

"For instance: If a Safety Scout sees a mop and a pail of scalding water on Mrs. Muldoon's back steps and one of her babies in danger of pitching into it headfirst, he'd better not walk up and begin to scold about it. Mrs. Muldoon may have done that for years without scalding any one yet. More likely than not she'd just order you off the place—and go right on as before. But if, instead, a Scout steps up and begins playing with the baby, he can first get baby out of harm's way and then watch his chance to say, 'Baby seems to have his eyes on that pail of hot water, Mrs. Muldoon. Two babies over on the west side were scalded to death last week; did you hear about it?' Chances are Mrs. Muldoon will be around warning all her neighbors before you've been gone ten minutes. Got the idea?—honey instead of vinegar."

"Honey works better down in South America, anyhow!" said a deep voice, and a tall, handsome man stepped forward, saluted, and shook hands cordially with Colonel Sure Pop. He was brown as a berry from the tropical sun and he carried his left arm in a sling.

"Uncle—Uncle Jack!" The Dalton twins forgot that the troop was on review, forgot Mrs. Muldoon's babies, forgot everything and everybody but Uncle Jack. What a surprise! And he knew Sure Pop, too!

"Sure pop, I do!" laughed the explorer, kissing Betty warmly before the whole admiring troop. "Here, look out for that lame arm, you rascals! Our surgeon told me it would be well in a month, but he was too optimistic, for once!" For Bob and Betty were fairly swarming over their favorite uncle, home at last from the jungle.

"Nellie," said Uncle Jack to Mrs. Dalton that night, when the Safety Scouts were off to bed at last, "those twins of yours are making history—do you realize that?"

"Well," said his sister, "they have their faults, like all the rest, but they are pretty fine youngsters at that. But, oh, Jack, they're growing up so fast!"

"They are, sure enough, like weeds; but their harvest isn't going to be any weed crop, now mark my words. I heard most of what was said at their patrol review this afternoon before anybody saw me; and on my word, Nell, those youngsters have started something bigger than they have any idea of, something that no power on earth is going to be able to stop. After all, I'm just as pleased that the old chief's spear thrust sent me home in time to see the Safety Scouts of America in the making!"

A Real Scout Knows How to Take Care of Himself—and Others.—Sure Pop.

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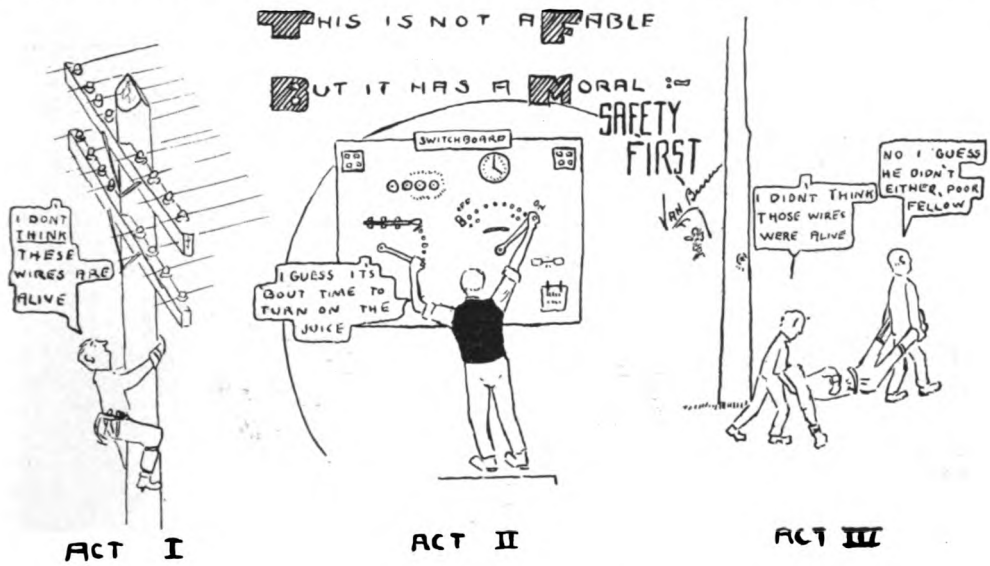
SAFETY FIRST

SAN JOAQUIN LIGHT & POWER CORPORATION

Look Out Where You Put Your Fingers!—by Van


THIS IS NOT A FABLE
BUT IT HAS A MORAL :—
SAFETY FIRST
I DONT THINK THESE WIRES ARE ALIVE
SWITCHBOARD
I GUESS ITS BOUT TIME TO TURN ON THE JUICE
I DIDNT THINK THOSE WIRES WERE ALIVE
NO I GUESS HE DIDN'T EITHER, POOR FELLOW
ACT I
ACT II
ACT III

Are You Awake to the Fire Risk?

Here are some facts brought out in the testimony of a clothing proprietor at an inquest after a fire: (This was a four-story building, with brick walls, wood floors, one open stair. Thirty-five lives were lost.)

He did not have any knowledge of the factory laws.

He allowed waste to accumulate in the basement.

He thought fire buckets better than chemical extinguishers.

He had not thought of automatic sprinklers nor of other devices of fire control.

He considered the ladder equipment of the fire department sufficient means of escape.

He did not know that cotton goods were easily ignited.

THANKSGIVING

The following is a Thanksgiving prayer circulated by the National Safety Council. While especially appropriate for Thanksgiving Day, it is a prayer which can well be said by the "Safety First" workman every day in the year:

I am thankful. My family are well. My health is good. I have not suffered serious accident. My children are doing well in school.

I am thankful. I am careful in my work. I sleep near an open window. I endeavor to set a good example to my family and my fellow workmen.

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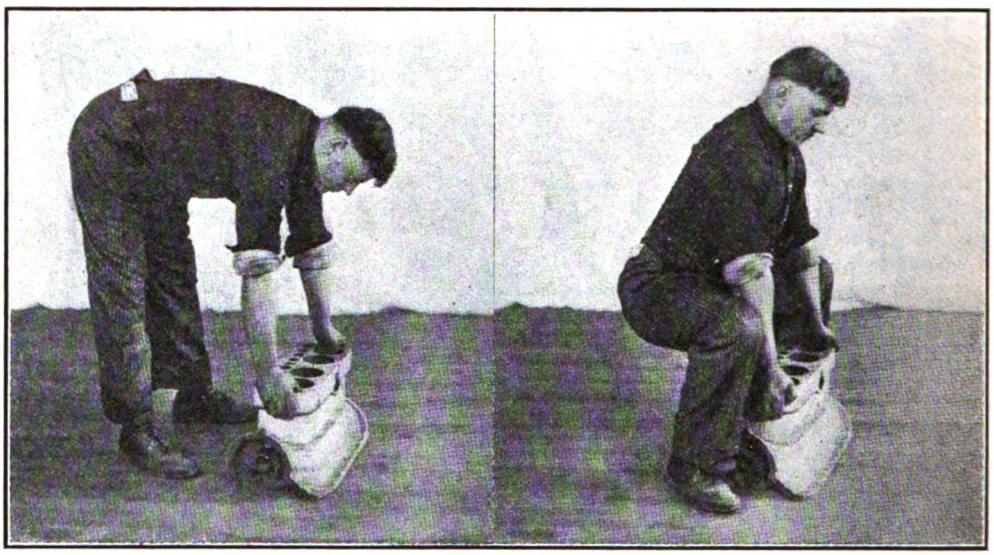
SAFETY FIRST

SAN JOAQUIN LIGHT & POWER CORPORATION

The Right and Wrong Way of Lifting



Hospital records show that many cases of strains and hernia are due to the wrong ways of lifting heavy objects. The picture on the left shows the wrong way. The man is bending from his hips and all the strain in lifting comes on the weakest part of his back—right over the kidneys. The back becomes lame and sore. The picture on the right shows the proper way of lifting. Keep the back as nearly erect as possible. Stand firmly on both feet and bend the knees. Let the feet be as near the load as possible, with shoulders directly over the ankles. Then when you lift the strain comes on the shoulders and hips, which are strong, and not on the weakest parts of the back. Try it and see how much easier it is over the old way. If you are in doubt as to your ability to lift the object, ask your foreman for assistance.

What Safety Work—"Being Careful"—Means

"And the end is that the workman shall live to enjoy the fruits of his labor; that his mother shall have the comfort of his arm in her age; that his wife shall not be untimely a widow; that his children shall have a father, and that cripples and helpless wrecks who were once strong men shall not longer be a by-product of industry."

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Fresno

Wm. G. Kerkhoff, president of the San Joaquin Light and Power Corporation, paid the system a visit for the purpose of inspection the middle of the month, spending a day with General Manager A. G. Wishon in a trip over the southern division, and the day following going to the new power house at Merced Falls with Mr. Wishon and other officials from headquarters in Fresno. From there Mr. Kerkhoff and Mr. Wishon took the train for San Francisco.

General Manager A. G. Wishon spent considerable time in Los Angeles the first part of the month.

Paul G. Redington, supervisor of the Sierra National Forest with headquarters in North Fork, was a visitor in Fresno during the month and paid the office a call. Mr. Redington is always a welcome visitor in thhe San Joaquin Light and Power circles.

Electrical Engineer Kalenborn was absent from the office for several days during the month on a sad mission, having been called to the northern part of the state on account of a fatal accident that befell Mrs. Kalenborn's father.

Power was first generated in the new power house at Merced Falls January 24th and on January 30th the plant was syncronized with the remainder of the system. The Merced Falls staff consists of Wm. Blake, foreman, and W. C. Vorrath, operator.

Chief Load Dispatcher L. J. Moore spent a week at the Merced Falls power house making ready for the tying in of that plant with the rest of the system. General Superintendent E. A. Quinn was present when the big "tie up" occurred.

Power House Superintendent Elmer Gates, of the Crane Valley district, was a welcome visitor in the office during the month. It is seldom that Elmer gets down into the valley district and these occasions are always ones of rejoicing for his many friends in this part of the system.

Warren Ten Eyck, chief clerk of the San Luis Obispo district, spent several weeks with relatives in Fresno recuperating from a serious illness which necessitated an operation, performed in Los Angeles recently. He rapidly regained his strength after a short time in the balmy climate of the San Joaquin and expected to be back at his desk in the coast office by the first of the month.

Mark Webster, construction foreman in charge of the wiring of the Merced Falls power house, after the completion of that job returned with his crew to the Fresno substation to complete the switchboard wiring begun several months ago and which was postponed by the inability to obtain materials.

Charlie Lang, operator at the Copper Mine switching station, enjoyed a week's vacation during the month and spent the time in Fresno looking after his property interests in that growing city.

P. C. McCorkle, formerly relief operator, has been given a regular station in the dispatchers office in Fresno, and H. R. Downey is now making the round of the substations and switching stations doing relief. This change has been made necessary by the extension of the duties of Chief Load Dispatcher L. J. Moore, who in the future will spend more of his time at the generating and operating centers over the system on matters of technical and engineering detail.

Substation Foreman W. H. McKenzie enjoyed a visit from his brother, Roy McKenzie, who is a pay clerk in the service of Uncle Sam's navy on board the cruiser "New Orleans." While the vessel was in San Francisco for a few days on its way to the navy

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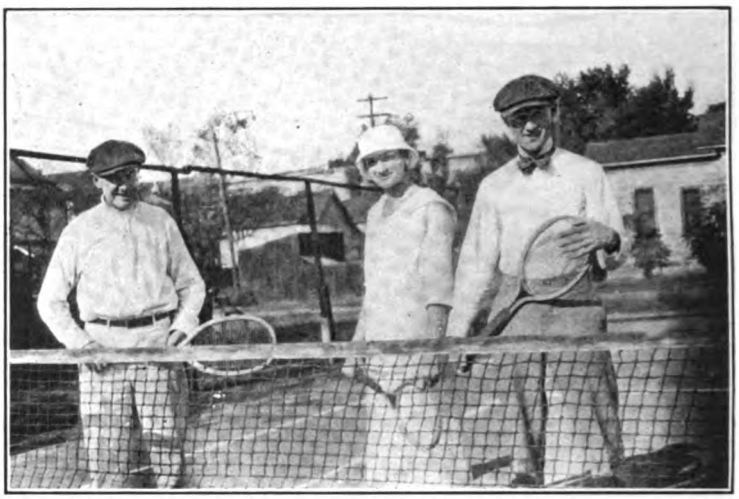

How happy L. J. Moore and Babe Walthall appear on the tennis court—particularly in the presence of a fair devotee of the sport.

yards at Bremerton, the younger McKenzie obtained a leave of absence for a day to run down to Fresno to visit his mother, Mrs. L. W. Estes, brother, and sister, Mrs. Ernest Ball.

The girls of the Bakersfield office have not a monopoly on Cupid by any means. During the present month a very interesting announcement was made in a very novel manner by one of the popular young ladies of the Fresno office. Miss Grace Sellers entertained in honor of Miss Helen Eby, one of the prospective brides of the office force, and during the progress of the evening a messenger boy arrived with telegrams announcing the engagement of the hostess to Mr. E. E. Bullard, an electrical engineer in the employ of this company. Needless to say Miss Sellers was deluged with congratulations and good wishes. No announcement has yet been made as to the date of the approaching nuptials. Miss Eby, however, resigned her position as a member of the stenographical force, the middle of the month to make ready for her wedding day party, which was celebrated Thursday, February 17th. The ceremony was performed at St. James Episcopal Church by Dean G. R. E. McDonald, and was witnessed by a small gathering of relatives. Mr. and Mrs. Robb will reside in Fresno, at 292 Illinois Street.

Substation Foreman McKenzie was in the Lemoore and Corcoran districts several days during the month.

Fred Muston, the district agent for the Lemoore territory, was a visitor in the Fresno office during the month.

Assistant General Manager A. Emory Wishon was in San Francisco and Los Angeles on business during the month.

O. A. Kummers, who took charge of the Corcoran district the first of the year, was in the Fresno office during the month for a conference with Assistant General Manager E. B. Walthall in regard to new business in that locality.

A. M. Frost, district agent at Selma, was one of the out-of-town boys in the Fresno office during the month.

General Superintendent E. A. Quinn made a trip to the Bakersfield district during the month to inspect the work being done in that district in repairing the storm damage of several weeks previous.

Jack Walsh met with a painful and severe injury during the storm period in a fall from a pole. He sustained heavy bruises to his right heel and hand which required a stay in the Eastgate Sanitarium for a while, but he is again on duty with the old-time "pep."

Chief Inspector J. M. Buswell acted as chairman of the Commercial Club's Ice and Snow Carnival at Huntington Lake, and injected some of the system

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and efficiency for which he is noted into the arrangements for this epoch-making excursion. This event was a decidedly important one in opening up the Sierras as a winter playground for the people of the state. It will be an annual feature and promises to add greatly to the fame of this favored section of the San Joaquin Valley.

Paul B. Wilson, district agent at Madera and one of the latest converts to the ranks of matrimony, was a visitor in the Fresno office during the month.

W. E. Whittington, district agent at Los Banos, was in Fresno for a few days during the month.

C. M. McCardle, district agent at Dinuba, was one of the out-of-town visitors to the Fresno office during the month.

Wm. Stranahan was elected to the presidency of the Commercial Club of Fresno and is now firmly established as the chief executive of this hustling organization.

Fletcher A. Easton and Mrs. Easton was prominent figures in the booth of the San Joaquin Light and Power Corporation at the Pure Food Show held in Fresno the first part of February. Mr. Easton will be identified with the campaign for the installation of electric stoves over the system.

W. A. McDougall, operator at the Famosa substation, enjoyed a week's vacation during the month and his post was filled during his absence by Relief Operator Downey.

High tribute was paid the protographic ability of Chief Load Dispatcher L. J. Moore during the month, when Photo Era, one of the leading magazines devoted to the art of photography, gave one of Mr. Moore's studies honorable mention in a competition running in that publication. Mr. Moore's study was an autumn scene in Roeding Park and was a very artistic piece of work.

O. S. Ambrose spent Sunday recently with his brother in the Coalinga oilfield where he is employed on one of the properties of the Royal Dutch Shell organization. Ambrose returned to Fresno loudly singing the praises of the culinary staff of the organization.

Frank Klippel, of the meter inspection department, made a trip to the Bakersfield and other districts in the southern end of the system during the month.

Despite a bad cold which almost rendered his voice useless, Operator J. O. Coffman, at the McKittrick substation, remained on duty during the month. He is still on the job.

"Red" Wilson has acquired a new name. "Aribo" is the chosen profix. It was acquired in this manner: When a section of the West 60 was blown down during the storm and "Red" was placed in charge of the rebuilding, he procured a gang of Mexicans to do the work. As these dark-skinned laborers hauled a pole into place it was to the tune of "Aribo." With every pull on the rope or heave, they let cry "Aribo." "Red" heard the word so much he began to dream "Aribo," and somehow the name has stuck to him. From all accounts "Red" had quite an experience on the west side, and it is said he worked longer hours than ever before. In the absence of beds it was more to his taste to work all night than to try to sleep on the cold ground or share blankets with one of the "Aribos." Jesse Camp was his assistant, and the two lads declare that the Mexicans do not make the best kind of workers. Once when they were "jinnying" a pole into place, the Jin Pole creaked and the Mexicans, thinking it was going to break and precipitate the load on top of them, quickly fled to safe territory, leaving "Red" and Jesse to uphold the honor of the crew. It was hard work for a few minutes, but they came through with flying colors.

If he isn't careful, Jack Frost, the genial district agent at Selma, will wake up one of these mornings to find himself famous. The following, which appeared recently in Al Joy's column in the San Francisco Examiner, is an indication:

"Here is a story that came floating in from Fresno—floating being used advisedly, since it came early in the week when the San Joaquin Valley

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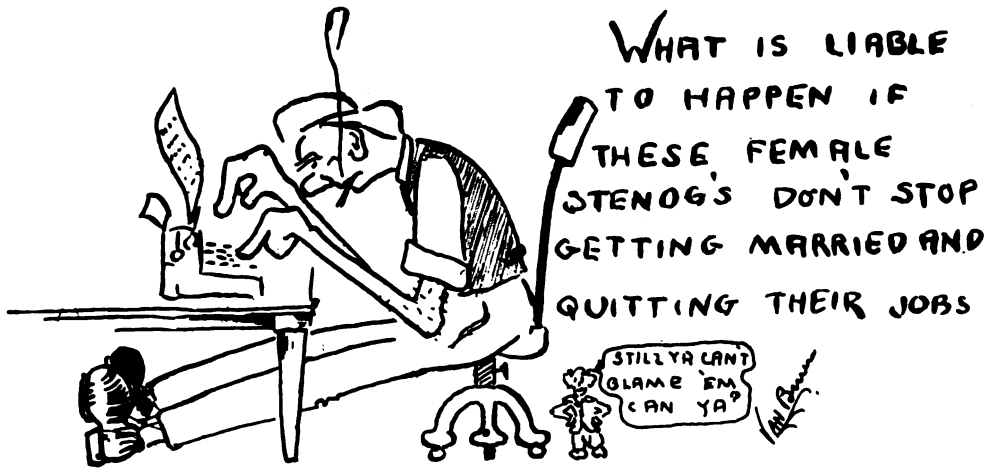
was so completely storm-wrapped that it expected to drift out to sea.

"Fifteen miles south of Fresno lies Selma, a pretty little country town, circled with vineyards and famed for at least two of its former citizens —Senator 'Noisy Bill' Scott and Keith, the eccentric millionaire, who recently died in his miserable shack in the rear of Selma's Chinatown.

"This tale, however, has nothing to do with either Senator Scott or Millionaire Keith. They are mentioned merely to give Selma some individuality. It might also be added that John D. himself couldn't buy a drink in Selma—not intimating, however, that John D. would.


WHAT IS LIABLE TO HAPPEN IF THESE FEMALE STENOG'S DON'T STOP GETTING MARRIED AND QUITTING THEIR JOBS
STILL YA CAN'T BLAME 'EM CAN YA?

"While the storms were raging most fiercely a week or more ago the representative of the San Joaquin Power Company suddenly came swishing like a big wet storm cloud into the company's main offices at Fresno. The assistant general manager looked at him in amazement and demanded:

"'Well, how on earth did you get here? I thought Selma had floated off the map by this time.'

"The Selma man shook his head.

"'No chance,' he grinned. 'We're safe enough. You know, Selma's dry.'"

Miss Marian Smith has accepted temporarily a position in the Magazine department.

Mrs. Frances M. Card is the latest addition to the membership of the stenographical force of the Fresno office.

W. O. Minkler has been filling in temporarily in the consumers department during the past month and is now assisting in the statistical department.

Statistician G. R. Kenney and Assistant General Manager E. B. Walthall were in San Francisco during the month on matters pertaining to the company now before the Railroad Commission.

Miss Maxine Jones was absent from the office for a week during the month on account of a threatened attack of pneumonia.

Miss Katherine Waterman has been appointed to the vacancy in the stenographical arm of the collections department caused by the resignation of Miss Helen Eby.

A. G. Shorthouse and Mr. Spaulding, representatives of the Price-Waterhouse Company, have been in the Fresno office during the month.

Bakersfield

H. H. Minor, of the electrical department, met with an accident during the month by which his legs were badly injured. He was compelled to use crutches for quite a time in order to get around.

Commercial Manager H. M. Crawford was compelled to take an enforced vacation during the month on account of the quarantining of his home be-

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cause of the illness of his child with diptheria.

The office newlyweds, Mr. and Mrs. H. P. Bender, Jr., were presented with a beautiful chest of silver during the month by their fellow employees in the Bakersfield district. The young couple are simply elated with the handsome present and they wish to express their sincerest thanks to their thoughful friends through the columns of the Magazine. In the words of Mrs. Bender, the present is "simply swell."

E. D. Farrow, Jr., of the Bakersfield district was absent a few days on company business in other parts of the system.

Murray Bourne, of the legal department, was in Bakersfield on company business during the month.

Jack Carter, district agent at Taft, made the Bakersfield office a call during the month.

During the recent rains and high water, the Arp Addition was flooded and some of the company employees have moved into town as the result of the drenching their homes received.

A. J. Busby, watchman at the steam plant, has resigned his position. Mr. Copher has taken the place vacated by Mr. Busby.

Garfield Gregg, of the consumers department, is the proud father of a baby girl. The parents have named her Martha Agnes Gregg. His family now consists of two boys and two girls.

Miss Mae Terry, who was assistant stenographer, has finished up her work for the present.

H. Maddaford has accepted a position in the stores department, vacated by Gordon Slater.

Charles Nugent, of the consumers department, had a little misfortune during the recent rain and windstorm. The roof of his house was blown off his home on Flower Street, Kern.

F. B. Tarpley, of the stores department, almost grew a mustache, but as it is the busy time in his department had to give up the idea for the present.

General Superintendent E. A. Quinn of the Fresno office made the Bakersfield district a business call during the month.

A. Y. Meudell, gas superintendent, was called to Los Angeles during the month to testify in the Lerdo Land Company case.

D. L. Wishon, superintendent of the Lerdo Land Company, also made a trip to Los Angeles regarding the same case.

D. Laney has taken a position in the garage to assist in getting the four new buses ready for business.

John Ogle has become quite a society favorite and was with a party that made a trip to Taft on a recent Wednesday night to attend a dance, an all night affair. Next day John had both hands up—"Never again!"

Ed McElligott, chief engineer of the Bakersfield steam plant, has been transferred to the Santa Maria steam plant.

Dan Young has returned to Bakersfield after an absence of several months and has accepted a position in the gas department.

Walter McDougall of the Famosa substation made the Bakersfield office a visit while in town.

J. K. Schultz, of the Canyon plant, made the office a visit during the month.

The last two miles of highway between Bakersfield and Tejon is finished and many of the Bakersfield office force made trips in their machines to the canyon. It is a splendid road and the trip was much enjoyed.

Due to the wind and rain storms of the past month, Superintendent C. L. Easton and D. B. Ogle, with an extra force of men, have been putting in extra long hours and a lot of hard labor.

Charles Nugent, of the consumers department, was confined to his home several days on account of trouble with one of his eyes.

The installation of the new gas main to Kern River fields was a difficult job as the rains and high water made it difficult to work on it. The line runs from Taft by way of Rio Bravo, Kern River fields, then to Bakersfield.

J. M. Buswell, chief inspector, of the Fresno office, made the Bakersfield office a visit.

Many of the office employees made

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An attractive window display arranged by Commercial Manager H. M. Crawford and Salesman Carson, of the Bakersfield store, to promote the use of gas heaters during the fall and winter months in Bakersfield where natural gas is a part of the company's service.

a trip to the Kern River during the recent high water, after office hours. The high water was quite a sight.

Mr. Beck, of the consumers department, made a trip to the snow district recently in his Ford. He reports a fine trip and that the snow was way down on the foothills.

Ed Hyatt stopped off in Bakersfield on his return from Los Angeles, where he was called to testify in the Lerdo Land Company case.

Lou Johnston made a trip to the west side during the month inspecting meters.

Madera

Chief Clerk D. V. Kimmick went to Merced recently with a party of local Knights of Pythias to attend a banquet given by the Merced lodge of the order.

Construction Foreman A. M. Hensley and crew have completed the building of several extensions in Chowchilla where twenty-two new customers have just been put on the service.

Horace Parks, electrician of the local office, is again performing his duties after an enforced layoff of three weeks caused by a severe fall from his motorcycle by which one of his ankles was badly sprained.

I. L. Webb has entered the employ of the company in the local office in the capacity of transformer and meter man to fill the vacancy caused by the departure of J. E. Treglown for Grass Valley, where he will make his home in the future.

Miss Lena Northern has been assisting in the local office for the past two months in the capacity of stenographer.

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C. H. Hubbard, of Los Angeles, a brother-in-law of Assistant Bookkeeper H. D. Stebbins, paid Mr. and Mrs. Stebbins a visit during the early part of the month.

Superintendent of Operation E. J. Crawford and Electrical Superintendent Harvey Shields were in Madera during the month while on their way to Knowles to inspect the new 30,000 volt substation being erected there under the supervision of Superintendent Shields. Good progress is being made with the new station.

Figs took on a new aspect to many growers of Madera County when buyers this month came through offering a minimum of four cents for Adriatics, and never before have the trees received the same attention as is being given them this season. The rancher who has a few trees around his house is carefully trimming them for he sees a source of revenue that in the past has been overlooked. Fig orchardists, of which there are several in this county, are congratulating themselves, and the additional acreage set out this year to orchard shows figs in large percentage.

One of the largest recent plantings is that of Chas. H. Knubel, San Francisco merchant, who has purchased eighty acres bordering the state highway, near Califa. Sixty acres he has set to orchard, giving preference to olives and figs, although there is a goodly sprinkling of peaches and apricots. Knubel still makes his home in San Francisco, but spends a portion of his time in Madera County.

A small-sized cyclone recently destroyed the barn and separator house of D. B. Thompson, patron of the San Joaquin Light and Power Corporation, residing near Chowchilla. Thompson's residence and pump house were unharmed and while the line of willow trees on one side of his reservoir were bowed to the ground and in some instances torn up by the roots, those on the opposite side were unharmed, so narrow was the cyclone's path. The barn was demolished and scattered over several acres of ground and scarcely two boards of the separator house remained together. Others in Thompson's vicinity suffered damage from the storm, but his was greatest.

Ranchers of Madera County, who for more than a year have enjoyed the benefits of the farm bureau and farm adviser system, are taking keen interest in Fresno County's effort to obtain a farm adviser. A delegation from this county, including Farm Adviser T. C. Mayhew, attended a recent meeting in Kerman, where Mayhew explained the working of the system and told the conditions imposed by the United States Department of Agriculture and the University of California College of Agriculture before the appointment of a farm adviser will be made and his salary provided for.

House to house campaign that will include every raisin grower in Madera County is being made in an effort to see that a just proportion of the additional acreage sought by the California Associated Raisin Company comes from here. The Madera County Chamber of Commerce has sent committees out with raisin contracts and the growers who have already signed with the Associated Company are actively aiding with the work among their neighbors. In addition, Harry Piper of the Associated Company's Fresno office and "Sandy" Gardner of the California Fruit Canners' Association have been busy in Madera County.

Merced

C. F. Gilcrest, chief of the meter department, made an inspection of all meters on the large installations at the mines above Merced Falls. He was accompanied on this trip by District Agent R. Casad.

The new power house at Merced Falls is now operating and on February 3rd, during a shut down at Madera, the city of Merced and suburban districts were entirely fed from the new plant. This will be a great benefit to this district as it will reduce the amount of shut downs and other complaints which are caused by trouble outside this district. At this time there is only one generator in use, but the

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other will be running in the very near future.

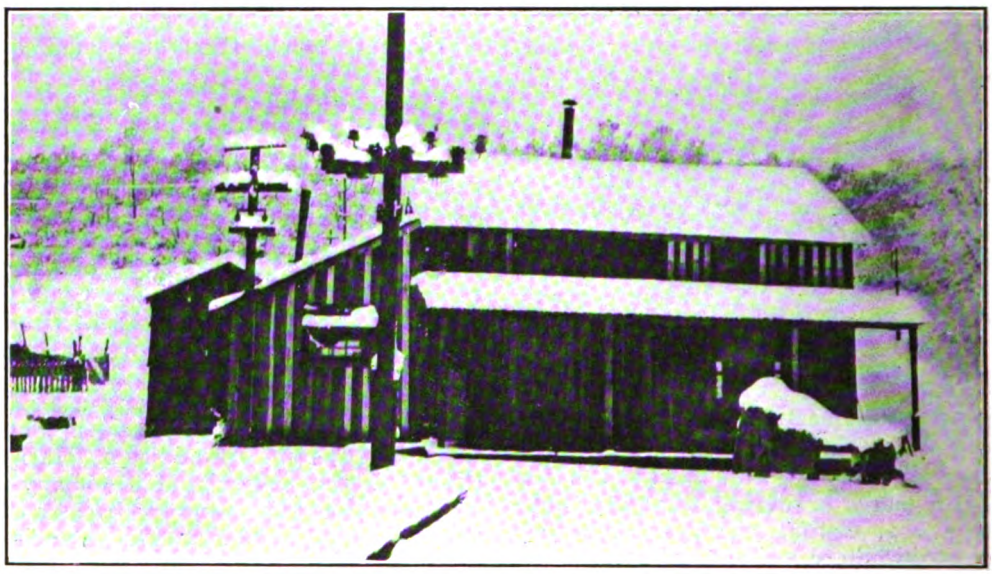
Substation Inspector McKenzie made his regular monthly trip to this district, and also took in the new power house at Merced Falls.

District Agent R. Casad is now moved from the city to his new country home, just outside the city limits, which he recently purchased. In the most part, this tract, which contains 20 acres, is divided into orchards of peaches, apricots and other fruits, and also has an abundance of almonds.

Wishon, general manager; A. Emory Wishon, assistant general manager; E. A. Quinn, general superintendent; A. S. Kalenborn, electrical engineer, and Ben Meyer, made a trip to Merced Falls to inspect the new power house on February 13th. Mr. Kerckhoff and Mr. Wishon took the train at Merced for San Francisco, and the rest of the party returned to Fresno.

Crane Valley

Power House Superintendent Elmer Gates made a hurried trip to Fresno



How would you like to spend your winter here? This is the home of Ditch Tender A. B. Bellows, on the No. 1 ditch near North Fork, as it appears during the winter season

The residence has all been remodeled and is now one of the most attractive places in the entire county.

Line Foreman G. H. Graham and his crew have been in the Atwater district during the past week making extensions which will add eight new consumers to our list.

The prospects for new business is increasing daily and within the coming year our new business report should show a profitable increase.

R. Casad, district agent, spent one day during the month in Fresno making purchases which will add to the attractiveness of his now home.

Wm. G. Kerckhoff, president; A. G.

to consult a dentist during the month, because of a great deal of trouble one of his molars was causing him.

Superintendent of Operation E. J. Crawford, Electrical Engineer A. S. Kalenborn, and Engineer Emil Newman were in the district during the month making locations for the buildings of the No. 2 power house. Work on this project will be put forward from this time on.

Taft

Authentic reports of the storm damage indicate that nearly 2,000 derricks were blown down, which is about 25 per cent of the total number of produc-

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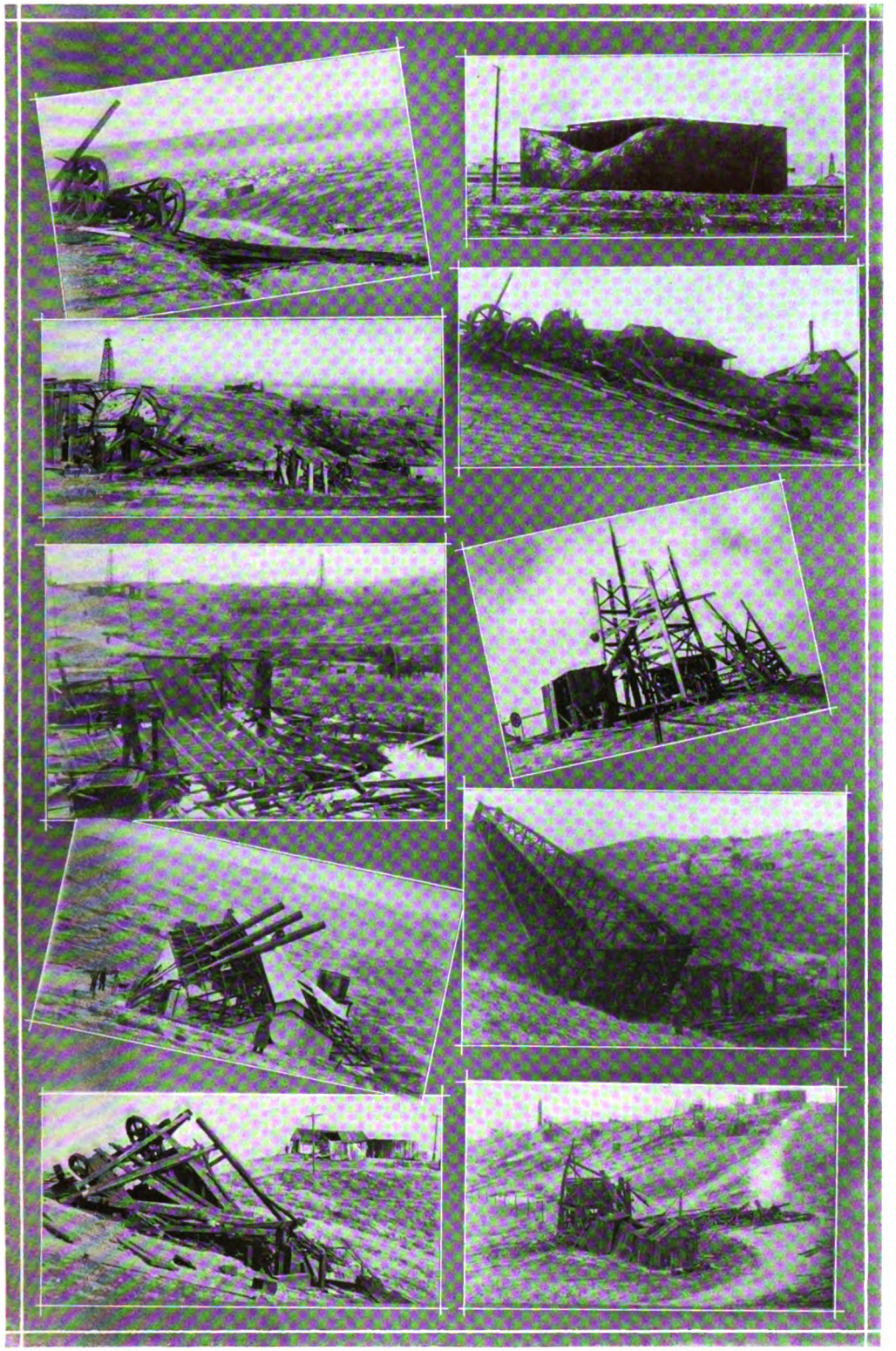

Views showing the destruction done in the Midway oilfield by the recent storm that swept the San Joaquin Valley

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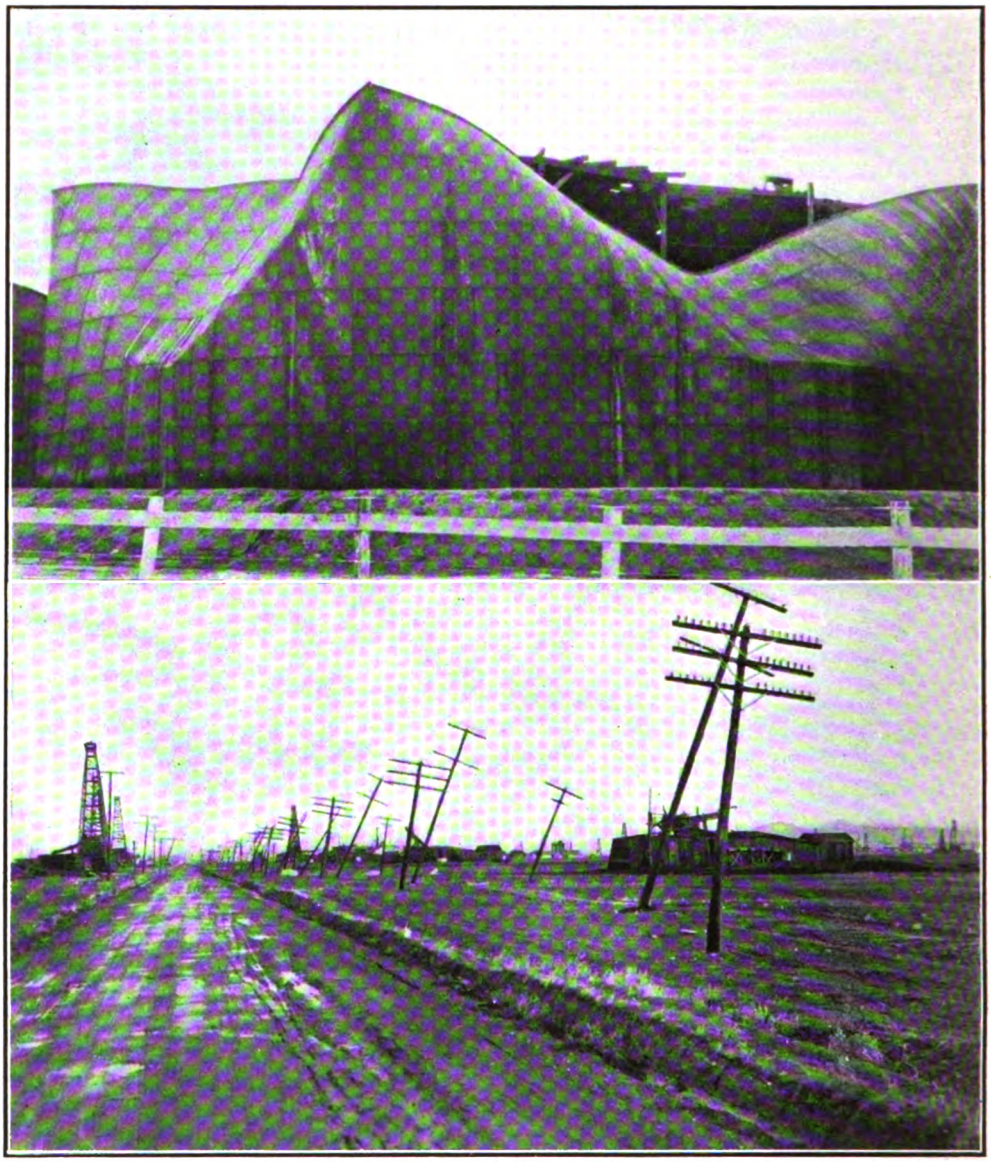

Scenes of storm damage in the Coalinga field. Upper, a 55,000 barrel oil storage tank on the property of the Associated Oil Company after the wind had died down. Lower, view along Derrick Boulevard, showing damage to oil well derricks and pole lines.

ing wells in the San Joaquin Valley; a small portion of the derricks were at idle or incompleted wells. The month of February may therefore be expected to show a shortage in oil production over the entire state amounting to possibly 40,000 barrels per day, or over 15 per cent of the recent monthly totals. Derricks can probably be replaced at a cost of about $400 each, or a total of about three-quarters of a million dollars, of which about one-third will be spent for labor. There seems to be but little possibility of reconstructing the derricks to avoid similar loss in the future and operators must find such comfort as they may in the fact that such storms are un-

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usual and never before have caused such destruction.

Of the wrecked rigs, 1,352 were in the fields of Kern County, and more than 500 in the Coalinga field in Fresno County.

Tule River

Dispatcher R. C. Denney spent his four days vacation during the month on a visit to this district and had an enjoying time fraternizing with the bunch.

An augmented gang has been working at the upper end of the tunnel repairing the damage to the headworks and getting that part of the plant in shape again. Repairs to the road have been made and travel between the power house and Springville has been resumed.

There has been an abundance of water of late and the power house has daily been grinding out its full share of juice.

Shortly after former Operator Wisner's arrival in Boston, where he is now employed by Stone and Webster, he wrote to Superintendent Jack Nelson for a chest of tools which he left behind. Jack sent these together with a lathe that belonged to Wisner, and in a letter received a short time ago by Dispatcher Dunkle in Fresno, Wisner complained that from the size of the freight bill an outsider would have thought Jack shipped the entire power house. From all accounts, Wisner is still paying freight bills instead of buying shoes for the baby.

With the Street Car Boys

Motorman Nelson has returned to his bus run after a month's illness and is making the rounds as usual with the same old pleasant smile.

Motorman Ed Turner was a member of the orchestra which furnished the music at the recent supervisors banquet in East Bakersfield, and it is reported that Ed never missed a note.

Motorman B. Cummings enjoyed a several days layoff during the month and took advantage of the early spring planting season to put in some crops at his Union Avenue ranch.

Conductor Spear was laid up for several weeks with a lame leg but is again on his usual run with his health restored.

Conductor H. Shaffer and family returned home safely from their trip to the Sacramento Valley in Shaffer's Ford Flyer.

Master Mechanic Mickelberry has completed the job of overhauling and transforming into P-A-Y-E four of the cars, and is deservedly proud of the work.

Motorman John Miller has proved to be one of the heroes of the recent jitney election, and also set an example which future politicians may well follow when it comes to handling the suffragette vote. The day of the election John called at the house of a voter to transport the lady of the house to the polls, but she balked at going out, claiming that the washing had piled up and there was too much of it needing attention for her to spare the time to vote. As great as this obstacle might seem to be, it was a small one in the eyes of John, and after instructing the lady to put on her bonnet and coat, he wrapped up the laundry and deposited it at the steam laundry office on the way to the voting place. John says that it is not right to expect a lady to do a washing that would stagger a Chinaman.

One of the pleasant features of the jitney election was the visit of a crew of the boys from the Fresno street car system, who came down from the Raisin City on election day to operate the Bakersfield cars while the local boys were busy in rounding up their friends to go to the polls. The Fresno boys handled the situation in great shape, and the chance to make new friendships was very much appreciated by Superintendent Turner and his staff.

Motorman Washburn was compelled to take a layoff during the month on account of illness. He has given up ranching and is again domiciled in his home on North Chester Avenue.

Motormen J. Moore and George Young were two sufferers from the flood that washed over the Arp Tract north of the city during the storm

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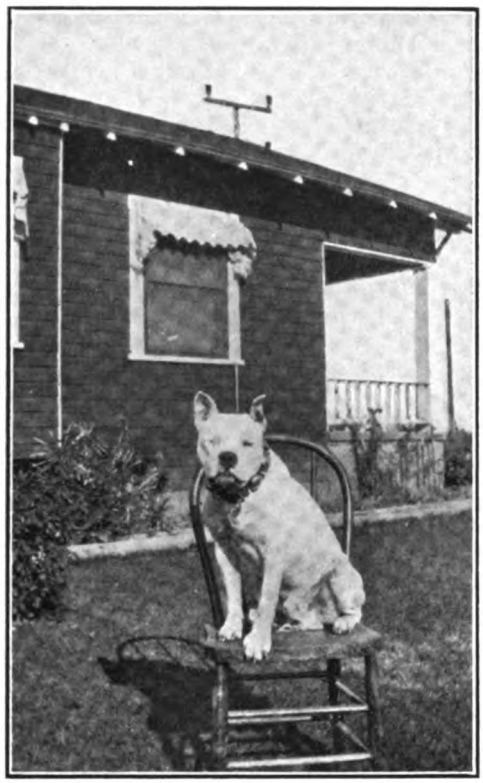

The custodian of the ice box at the Strathmore sub. Unless you are properly invited and are willing to do your turn at the kitchen sink, this gentle little creature is apt to impress himself upon some part of your anatomy. Ask Mac.

period of last month. They have decided that it is safer to live on higher land and have accordingly moved from their small acre holdings to Bakersfield city property.

Two careless passengers were recently made glad by Conductors Hill and Thomas by returning five dollar pieces deposited in coin boxes by mistake for nickels. The conductors watch the boxes with hawk-like attention and the minute a mistake is made, are quick to rectify it. It is such little acts as these that go to maintain the high quality of service.

The announcement of Manager Farrow, shortly after the jitney election, that three new busses would at once be installed so as to make connections at the East Bakersfield and West Park terminals with every car, was received with a great deal of satisfaction by the patrons in these parts of the city.

The Bakersfield Echo printed the following: J. O. Arnold of the Bakersfield electric street car lines will move onto his twenty-acre Edison mesa tract this week and improve his property as an orange proposition. He has a dwelling and a $1,600 pumping plant already as a start towards improving the place and in the spring he will plant orange trees. His pumping plant affords 20 inches of water at a lift of 90 feet, and he has a choice location on the new paved highway between Bakersfield and Edison. His ranch is four miles east of the city limits and he will make the trip back and forth in his little runabout.

San Luis Obispo

A bumper season is assured stock raisers in this section this year. According to reports from San Luis Obispo and neighboring counties ranch owners have been stocking up and now there are more beef cattle fattening in this section than in many years past. With heavy rains, pasture is excellent, the feed now being several inches high. This condition is attributed not only to the rains of the present season, but also to the heavy rains of the past two winters. These rains brought up a rank growth which went to seed, and for two fall seasons cast its seed over a wide territory. During the winter this seed has produced heavy and rich pasturage. The beef cattle output of San Luis Obispo County this year is expected to set a new record and insure prosperity to stockmen. The demand for meat has increased and good prices are expected.

Gasoline Torches

If your work compels you to use a torch, keep it in the proper condition. Examine torches for leaks before lighting. Never loosen the filling plug while flame can be seen. Do not get too close to the torch if your clothing is greasy or gasoline has been spilled on you. If you do not use torches, keep away from them.

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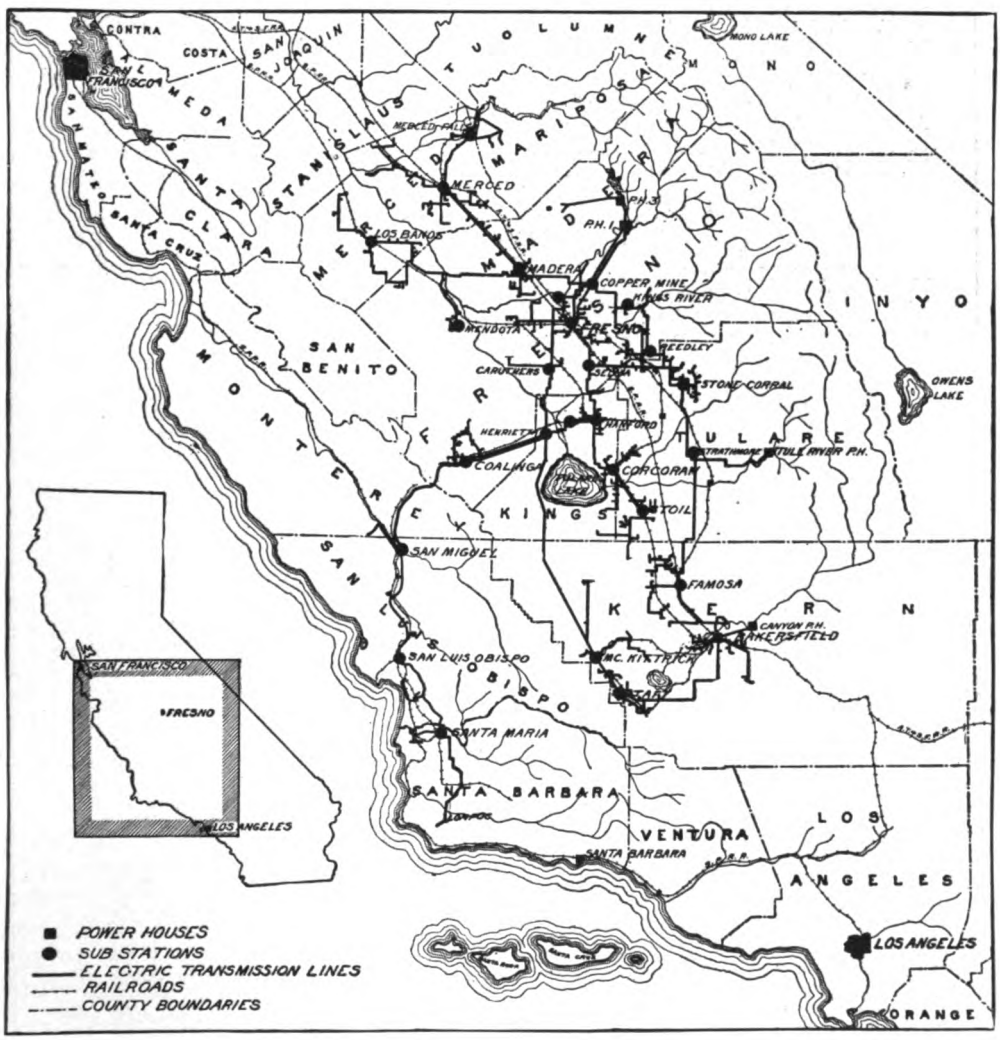
San Joaquin Light & Power Corporation

Map Showing the Ten Counties Served and Extent of Territory as Compared to the Total Area of California



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A. EMORY WISHON, Assistant General Manager	Fresno
E. B. WALTHALL, Assistant General Manager	Fresno
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L. M. FARNHAM, Secretary	Los Angeles
W. E. DURFEY, Assistant Secretary	Fresno

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D. P. MASON, District Agent	San Luis Obispo

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E. J. CRAWFORD, Superintendent of Operation	Fresno
C. L. EASTON, Electrical Superintendent, Southern Division	Bakersfield
HARVEY SHIELDS, Electrical Superintendent, Northern Div.	Fresno
ELMER GATES, Power House Superintendent	North Fork
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JACK NELSON, Power House Superintendent, Tule River	Springville
A. Y. MEUDELL, Superintendent Steam Plant	Bakersfield
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